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C. W. BENSON

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PREFACE

The arrangement and lay-out for this volume (number 91) is the same as for its predecessor. As previously, thanks are due to those who have spoken at the Club's meetings; to contributors to the *Bulletin*; and to those who have advised the Editor on individual papers, including Mr. P. R. Colston, Mrs. B. P. Hall, Mr. I. C. J. Galbraith, Capt. C. R. S. Pitman, Dr. E. Mayr, Mr. K. D. Smith and Dr. C. Vaurie. Thanks are again due to Mr. K. E. Wiltsher, Manager of the Caxton and Holmesdale Press, for his co-operation in the regular production of the *Bulletin*; and also to Mrs. C. W. Benson, who spent much time on proof-reading, and Mrs. M. Hawksley likewise on the compilation of the Index to Scientific Names.

C. W. BENSON

LIST OF MEMBERS AS AT 31st DECEMBER, 1971

Amended as follows:

New Members

Casement, Commander M. B., r.n., Dene Cottage, West Harting, Petersfield, Hants.
Colebrook-Robjent, Major J. F. R., Musumanene, P.O. Box 303, Choma, Zambia.
Hurford, M. J. L., 2 Matching Lane, Bishop's Stortford, Herts.
Mann, C. F., P.O. Box 10, Kapsabet, Kenya.
Skinner, Professor N. J., P.O. Box 30197, Nairobi, Kenya.
Stjernstedt, R., P.O. Box 15, Mbala, Zambia.

Resignations

Miss C. M. Acland
R. P. Bagnall-Oakley
G. S. Clark
H. B. Fossey
J. D. Lindsay
C. J. Oversby
C. H. F. Parsons
R. G. Pettitt
A. A. Prestwich
R. F. Stefauski

Deaths

The Committee regrets to record the deaths of the following members:—

Dr. J. W. Campbell
Dr. J. M. Harrison (Vice-Chairman 1945–46, Chairman 1946–49)
Dr. C. de Lucca
The Right Hon. The Earl of Mansfield
Mr. T. H. McKittrick

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Corrigenda

p. 3, line 8: '1953' to read '1933'
p. 7, line 1: '*Passeriformes*' to read '*Non-passeriformes*'
p. 60: Under Opinion 904, section 2(b), '*Moticalla*' to read '*Motacilla*'
p. 89: '*Bull. Brit. Orn. Cl.* 70' in both cases to read '*Bull. Brit. Orn. Cl.* 90'
p. 110: Under *Caprimulgus europaeus*, 'Kolifi' to read 'Kilifi'
p.111: Add to 'References':—'White, C. M. N. 1965. *A revised check list of African non-passerine birds*. Lusaka: Government Printer.

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C. W. BENSON

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Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

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The six hundred and sixty-eighth meeting of the Club was held at the Criterion in Piccadilly, London, W.1 on Tuesday, 19th January, 1971 at 7 p.m.

Chairman: Dr. J. F. Monk; present: 18 members and 13 guests.

The speaker was Dr. D. W. Snow who addressed the Club on "Field Studies in Guyana", and illustrated his talk with a gramophone record.

The Cambridge collection from the Malagasy Region

by C. W. Benson

(PART II)

Received 10th October, 1970

Charadrius leschenaultii Lesson: Both Rountree *et al.* (1952: 175) and Watson *et al.* (1963: 149) consider it rare in Mauritius. There are five specimens, all in non-breeding dress, collected in January 1864 or 1865, and R. Newton (1958: 55) evidently found it not uncommon. Watson *et al.* (1963: 167) state that dates are unknown for the Seychelles. There is a specimen in non-breeding dress collected by E. Newton on Mahé on 26th January, 1867. He (1867: 342, as *Aegialitis geoffroyi*) found it common there. Loustau-Lalanne (1963: 17) regards it as a permanent resident, probably breeding, but this certainly requires confirmation.

Numenius arquata orientalis (Brehm): Watson *et al.* (1963: 167) record *N. madagascariensis* (Linnaeus) from the Seychelles. Despite this misleading name, on geographical grounds this is most unlikely, and I am unaware of any authentic record from anywhere in the Malagasy Region. Loustau-Lalanne (1963: 17) does not mention this species, but does record *N. a. orientalis*. This can be substantiated by a specimen collected by E. Newton on Mahé on 31st January, 1867, sexed ♀ and showing the colour-characters of this form. The bill (culmen from base) measures 167 mm. Newton (1867: 346) found this species much less common than *N. phaeopus* (Linnaeus), this also applying in such areas as Madagascar and the Comoros (Benson, 1967: 90).

Xenus cinereus (Güldenstaedt): According to Rountree *et al.* (1952: 157), there is no proof of its occurrence on Mauritius. There is however a specimen collected by Dr. W. H. Power on 13th January, 1864.

Glareola maldivarum Fischer: Rountree *et al.* (1952: 179, as *G. orientalis* Leach) record it as accidental on Mauritius, mentioning a specimen in the Mauritius Institute. There is another specimen in Cambridge, collected by

Dr. W. H. Power at Cannonier's Point on 24th December, 1864. It was originally labelled as *G. ocularis* Verreaux, but appears to be an immature *maldivarum*, the black line encircling the throat still poorly developed. Compared with an immature *ocularis*, in which of course there is no sign of such a black line, the bill is less robust, the chestnut of the axillaries and under wing-coverts is richer in tone, and chestnut on the abdomen is lacking. The immature *ocularis* differs from adults of its species in having the crown less dark, not contrasting with the mantle, and the chin and throat pale buffy, markedly contrasting with the chest. Unfortunately the outer rectrices of the *maldivarum* are worn and incomplete, measuring 65 mm. only (outer remiges also worn, wing 168 mm. only), so that it is impossible to be absolutely sure that it is this species, not *G. pratincola* (Linnaeus) (cf. Vaurie, 1965: 453). But the former is the most likely, for it has also been recorded from the Seychelles (Benson & Roux, *Oiseau*, 1967: 145). These authors did not give measurements of the two specimens which they examined. They are, in mm.:

	Wing	Outer rectrix
♂	189	84
♀	191	75

Bailey (*Ibis*, 1967: 439) records seeing a *pratincola* in the Seychelles in November. He was presumably following Watson *et al.* (1963), whom he quotes, in treating *maldivarum* as conspecific with *pratincola*. Oustalet's record, to which he refers, is based on the two specimens of *maldivarum* discussed above.

Streptopelia capicola tropica (Reichenow): Two of the three specimens collected by Bewsher on Anjouan, in the Comoros, recorded by E. Newton (*Proc. Zool. Soc. Lond.*, 1877: 300) as *Turtur semitorquatus* (Rüppell), and originally so marked on the labels, are available. They are *S. capicola*, and this should dispel any doubt that might still linger as to the occurrence of *S. semitorquata* in the Comoros, rejected by Benson (1960: 49).

Psittacula eupatria wardi (E. Newton): There were originally eight specimens in Cambridge, two of which were exchanged with the Museum of Comparative Zoology, Harvard, in 1935. None of these was collected later than 1870, though there are three in London (ex H. B. Tristram) dated 1880–81 (see also *Tristram Cat. Birds*, 1889: 75). All nine are merely labelled "Seychelles". Two of the Cambridge specimens have a black collar, and are evidently males (the sexes are illustrated in *Ibis*, 1876, plate 6). They have wing 204, 209, as against 193, 194, 196 (one incomplete) mm. in the others, which lack the black collar and are presumably ♀♀. The specimens in London also lack the collar, and have wing 180, 189, 202 mm. Presumably they too are ♀♀. There is a mounted ♂ specimen in Paris (Jouanin, 1962: 280), presumably one of the two collected by Lantz on Mahé in December 1877 (Oustalet, *Bull. Soc. Philom. Paris* 2(4), 1878: 165–166). Oustalet quotes Newton that it also occurred on Silhouette and possibly Praslin, evidently from the table in E. Newton (1867: 359). But apart from this, Newton only (1867: 341) definitely gives Mahé as a locality. Abbott collected a specimen on Mahé in March 1893, but thought it on the verge of extinction, though by report still common on Silhouette (Ridgway, *Proc. U.S. Nat. Mus.* 18, 1895: 509, 513). I have not traced any evidence of its existence later than 1893.

Psittacula exsul (A. Newton): The only known material, consisting of a ♂ (perhaps immature), a ♀ and two bones, from Rodriguez, in Cambridge, has been discussed in some detail by Hachisuka (1953: 185–187). The ♂ has wing 202, the ♀ 194 mm. No evidence of the existence of this species has been forthcoming since 1874; see also Gill (*Ibis*, 1967: 387).

Otus insularis (Tristram): Gaymer *et al.* (1969: 167) take note of a specimen in Cambridge, collected on Mahé.

Neodrepanis hypoxantha Salomonsen (*Bull. Brit. Orn. Cl.* 53, 1953: 182–183): Salomonsen (*Oiseau* 35, no. spécial, 1965: 103–111) could trace only nine specimens. There is a tenth, in Cambridge. It is a ♂ in breeding dress, received from Watkins & Doncaster, dealers in natural history specimens, in October 1879. There is no information as to the locality or date of collecting. It is at once distinguishable from a ♂ in breeding dress of *N. coruscans* Sharpe, not only by colour-differences, but also by its shorter, less curved bill (culmen exposed 20 as against 24 mm.). The difference in the emargination and shape of the first (outer) primary, as explained and illustrated by Salomonsen (1933), is also clearly apparent.

Hypsipetes borbonicus subspp.: There is a series of four specimens of *H. b. borbonicus* (Forster), of Réunion, and 22 of *H. b. olivaceus* Jardine & Selby, of Mauritius. Excluding juveniles apparently not yet fully grown, wing-lengths in mm., together with those of material in Paris, confirm Benson (1960: 69), from measurements of the relatively scanty material in London, that *olivaceus* is the larger:

	Number of specimens	Wing
H. b. borbonicus	7	102–120 (113.0)
H. b. olivaceus	28	122–141 (131.6)

The only perceptible colour-difference is that *olivaceus* has the crown less intensely black and glossy. An apparent juvenile of *olivaceus* in Cambridge has the plumage as a whole tinged rusty, the throat white instead of grey. For comments on juveniles of H. *crassirostris* and *madagascariensis*, see Appendix 1.

Xenopirostris polleni (Schlegel): Rand (1936: 466) found this to be a rare bird of the forest of the Humid East in Madagascar. There are six specimens in Cambridge. Three appear to be adult, with the mantle, back and wing-coverts grey, the chest to abdomen white. The others appear to be immature, the grey above replaced by olive, the white below strongly washed with rufous, except in the area adjacent to the black throat, where there is a narrow band of white extending along the sides of the neck, only interrupted in the middle of the nape. Also, the gloss of the black head is less strong in the young birds, and bluish rather than violaceous in tone. There are four specimens in London, two apparently adult, two immature.

Dorst (*Oiseau*, 1960: 261) remarks on the similarity in plumage between *Tylas eduardi* Hartlaub and the genus *Xenopirostris*. The similarity in plumage, including the whole pattern, between immature *X. polleni* and *T. e. eduardi* (apparently at any age), is startling, although the former has a much heavier bill. Although not identical in colour, the adult of *polleni* still has a very similar pattern. Virtually nothing is known about *polleni* in life, though from reading Rand (*op. cit.*) it would appear that the two species are sympatric, and possibly even without any ecological difference. The relationship of these two should be studied further in the field.

Foudia sechellarum E. Newton: The following measurements in mm. have been taken from the material in London, Paris and Cambridge:

	Wing (figures *in extenso*)	Tail (in summary)
	Frigate	
♂♂	65, 68, 68, 72 (*68.2*)	43–46 (*43.9*)
♀♀	nil	nil
	Marianne	
♂♂	73, 74, *74*, *74*, *75*, *76*, *76*, *77*, *78*, *78* (*75.5*)	46–49 (*47.2*)
♀♀	67, 70*, 71, 71, 72, 72, 73, 74 (*71.2*)	44–48 (*45.7*)
	Praslin	
♂♂	*74*, *75*	47–48 (*47.5*)
♀♀	68	44
	Cousin	
♂♂	69, *70*, *72*, *72*, *73*, *73* (*71.5*)	43–47 (*44.6*)
♀♀	66, 66, 67*, 68, 68*, 69 (*67.3*)	40–45 (*43.1*)

The sexing is according to the collector's labels, except that in the case of the asterisked figures there would appear to have been mis-sexing, and they are placed where they seem more properly to belong. The italicised figures are from ♂♂ in breeding dress. Averages are also italicised.

Crook (*Ibis*, 1961: 520–521) has drawn attention to minor inter-island variation in colour. The figures above suggest that the population of Marianne, now extinct, showed a tendency to relatively large size. Possibly this also applies to that of Praslin. Crook also found that the birds of Frigate have longer bills than those of Cousin, though not so deep at the base. Culmen-lengths from base of skull of the above material are:

Frigate	♂♂	17 (17.0)
Marianne	♂♂	17–17.5 (17.1)
	♀♀	16.5–17 (16.9)
Praslin	♂♂	16.5 (16.5)
	♀♀	17 (17.0)
Cousin	♂♂	16–17.5 (16.7)
	♀♀	15–16.5 (15.7)

The only inference that might be drawn from these figures is that the Marianne birds are the longest billed, but this may be merely proportionate to their larger size as illustrated by the wing and tail-lengths.

Marianne is the type locality of this species, and as recorded in Appendix 1 there are three syntypes in Cambridge, where there are also two topotypes, one ♂, one ♀.

Appendix 1: Type material

All the material of the forms listed below appears to have been used in the original published descriptions. No specimen was ever formally designated as a type, although some were marked as such by Prof. Newton on the labels and in his register of the collection. The significance of all of this material has now been clearly indicated in red ink, and an indication made as to whether a particular specimen is a holotype or syntype.

It might be wondered why *Circus spilonotus macrosceles* A. Newton (*Proc. Zool. Soc. Lond.*, 1863: 180) is not included. The holotype is in London (Warren, 1966). Nor is there justification for including *Falco newtoni* (Gurney, *Ibis*, 1863: 34), of which there may be also pertinent material in London. A specimen of *Cuculus poliocephalus rochii* Hartlaub (*Proc. Zool. Soc. Lond.*, 1862: 224), which might be supposed to be the holotype, appears not to be. Such a specimen may have been in the possession of Hartlaub, who may have lost it (Benson *et al.*, 1970: 17).

(a) Names recognised in Peters *et al.* (1931–70); volume number in brackets

Sarothrura watersi (Bartlett) (vol. 2): 1 ♂. Two other syntypes in London (Warren, 1966).

Gallinula chloropus pyrrhorhoa A. Newton (vol. 2): 1 ♀.

**Streptopelia picturata comorensis* (E. Newton) (vol. 3): 1 ♂, 1 ♀, 1 juv. ♀.

Streptopelia picturata aldabranus (P. L. Sclater) (vol. 3): 1 ♂, 1 ♀. Considered to be from the Amirante Islands, not Aldabra (Benson, 1967: 76).

Coracopsis nigra barklyi (E. Newton) (vol. 3): 2 ♂♂, 1 ♀. Another ♂ syntype in London (Warren, 1966).

Psittacula eupatria wardi (E. Newton) (vol. 3): 1 ♂, 2 ♀♀.

Psittacula krameri echo (A. & E. Newton) (vol. 3): 1 ♂, 1 ♀, 2 juv. ♂♂. Another syntype (♂) was sent to Paris in 1897, and another (♀) to Harvard in 1935. It is surprising that Greenway (1967: 108) makes no reference to the first four of these specimens.

Psittacula exsul (A. Newton) (vol. 3): 1 ♀.

Hypsipetes crassirostris crassirostris E. Newton (vol. 9; no longer a binomial in view of *H. c. moheliensis*, see Benson, 1960: 68): 1♂ , 1 ♀, 1 juv. o. All three were collected on 28th January, 1867. The juvenile has markedly rusty margins to the secondaries, and the beak was "brownish, under surface yellow", whereas the ♂ had it "dirty orange" the ♀ "bright orange". Eight specimens out of the 25 in London have similar rusty margins. For descriptions of juveniles of *H. madagascariensis* (Müller), see Benson & Penny (1970: 478).

Tylas eduardi eduardi Hartlaub (vol. 9): 1 ♂.

Copsychus sechellarum A. Newton (vol. 10): 1 ♂.

**Turdus bewsheri bewsheri* E. Newton (vol. 10): 1 ♂, 1 ♀.

Neomixis tenella tenella (Hartlaub) (vol. 10): 1 ♀. Hartlaub gives no precise locality. The specimen is in fact labelled "♀, captured on her nest, Mohambo, September 1865", collector W. T. Gerrard. Forty-two specimens in London from northern Madagascar assigned to *N. t. tenella*, and among which all the localities for this subspecies given by Delacour (*Oiseau*, 1931: 481–483) are represented, agree best with it and in particular nine from the vicinity of Maroantsetra seem identical with it. By contrast, 23 specimens of *N. t. orientalis* Delacour are much less bright yellow below and darker olive above. In this series three of the localities mentioned by Delacour are represented, namely Fanovana, Ivohibe and Vondrozo. All of the localities for the species as a whole mentioned by Delacour are shown on the map in Rand (1936: 147). On or near the east coast the most southerly for nominate *tenella* is Maroantsetra, at 15° 24′ S., 49° 43′ E., within the bay enclosed by the peninsula ending in Cape Masoala. The most northerly for *orientalis* is Fanovana, at 18° 55′ S., 48° 30′ E. A. Newton (*Proc. Zool. Soc. Lond.*, 1865: 832–837) dealt with a general collection of birds, mammals and reptiles made by Gerrard at Mohambo in July and August 1865, but gives no indication as to where exactly it is situated. In *Carte de Madagascar* (D. Roblet, Paris, 1885) a small stream Mohambo is shown on the Cape Masoala peninsula, flowing into the sea on the eastern side at 15° 53′ E., and so only about 75 km. south-east of Maroantsetra. This map also shows a locality Mahambo (not Mohambo) on the east coast at 17° 30′ S. Despite the close similarity of specimens from Maroantsetra to the type, and the discrepancy in name (in any case only very slight), it seems more likely that Gerrard obtained the type at this second, more southerly locality. It is not far north of the port which had already been established on the east coast at Tamatave, at 18° 10′ S. (see E. Newton, *Ibis*, 1862: 265; 1863: 333). That the type was obtained on the remote Masoala peninsula seems much less likely. But the matter needs further investigation by collecting at Mahambo, the southern locality. If specimens therefrom agree with the type, this should be regarded as the restricted type-locality.

Hypositta corallirostris (A. Newton) (vol. 12): 1 o.

Zosterops borbonica e. newtoni Hartlaub (vol. 12): 2 oo. This form is not in fact recognized in Peters *et al.*, but see Storer (*Auk*, 1968: 127), who designates one of these specimens the lectotype.

**Zosterops maderaspatana anjouanensis* E. Newton (vol. 12): 2 ♂♂, 1 ♀.

Zosterops mayottensis semiflava E. Newton (vol. 12): 1 ♂, 1 ♀. Apart from these two syntypes, *pace* Greenway (1967: 427), there are six (not one) specimens of this extinct form in London; while Lantz collected seven, three of which are in Paris (Jouanin, 1962: 277). A third specimen in Cambridge was received from Lantz in 1878. There is also a specimen, the most recent, in Washington, collected by Abbott on 11th April, 1890 (Ridgway, *Proc. U.S. Nat. Mus.* 18, 1895: 509, 514). There is no conclusive evidence that it occurred anywhere except Marianne.

Zosterops modesta E. Newton (vol. 12): 4 ♂♂, 1 ♀. Newton had in all seven specimens. One of the other two is in Paris, and listed by Jouanin (1962: 297).

Foudia sechellarum E. Newton (vol. 15): 2 ♂♂, 1 ♀.

Foudia flavicans A. Newton (vol. 15): 3 ♂♂, 2 ♀♀. In all there are 17 specimens in Cambridge.

(b) Names not in Peters *et al.* (1931–70), publication awaited in vol. 8 or 11; see instead W. L. Sclater's *Systema Avium Ethiopicarum* (1924–30)

Newtonia brunneicauda brunneicauda (A. Newton): 2 ♀♀.

Tchitrea corvina E. Newton: 3 ♂♂, 2 ♀♀. Newton writes of a juv. ♂, similar to ♀. But the material appears to consist of five adults, as now sexed.

**Tchitrea mutata vulpina* E. Newton: 2 ♂♂, 2 ♀♀.

Calamocichla newtoni (Hartlaub): 2 ♂♂.

**Nesillas typica longicaudata* (E. Newton): 1 ♂, 1 ♀.

Bebrornis rodericanus (A. Newton): 1 ♂. There are two other specimens in Cambridge.

*Not all of the material used according to the description; no record traced of the subsequent history of the extra material.

(c) Name not recognized.

Gallinula dionysiana A. Newton: 1 o. Considered a synonym of *G. chloropus meridionalis* (Brehm), see p.172 above. This name seems never to have been used since it was originally proposed well over 50 years ago, so that under the *International Code of Zoological Nomenclature* (1964) it is a *nomen oblitum.*

Appendix 2: Material of forms not already mentioned, considered by Jouanin (1962)

Nesoenas mayeri (Prévost & Knip): 1 ♂, 3 ♀♀. One of the females, from Grand Bassin (Mauritius), 23rd July, 1861 had "eggs in ovary large". R. Newton (1958: 58) gives the normal breeding season as from October to February, but does also record an egg in May.

Streptopelia picturata rostrata (Bonaparte): ♂, Marianne, 12th February, 1867 (E. Newton): 2 oo, "Seychelles", May 1870 (E. P. Wright).

Falco araea (Oberholser): 3 ♂♂, 5 ♀♀. For a systematic discussion and comparison with *F. newtoni.* see Benson (1967: 70–72).

Falco punctatus Temminck: 5 ♂♂ (wing 161, 171, 172, 172, 174), 4 ♀♀ (wing 173, 173, 178, 185 mm.).

Bebrornis sechellensis (Oustalet): 2 ♂♂, Marianne, September 1877 (Lantz); 1 o, Cousin, February 1888 (J. J. Lister). Jouanin uses the generic name *Nesillas.*

Coracina newtoni (Pollen): 1 ♂, 3 ♀♀. Jouanin uses the generic name *Coquus* for this and the next species.

Coracina typica (Hartlaub): 7 ♂♂, 3 ♀♀, 1 juv.o.

References:

Benson, C. W. 1960 The birds of the Comoro Islands. *Ibis* 103b: 5–106.

— 1967. The birds of Aldabra and their status. *Atoll Res. Bull.* 118: 63–111.

Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. Stuart. 1970. Notes on the birds of Zambia: 5. *Arnoldia* (*Rhodesia*) 4(40).

Benson, C. W. & Penny, M. J. 1970. The land birds of Aldabra. *Phil. Trans. Roy. Soc.* B. 260: 417–527.

Gaymer, R., Blackman, R. A. A., Dawson, P. G., Penny, M. J. & Penny, C. M. 1969. The endemic birds of Seychelles. *Ibis* 111: 157–176.

Greenway, J. C. 1967. *Extinct and vanishing birds of the world.* Revised ed'n. New York: Dover Public'ns.

Hachisuka, M. 1953. *The dodo and kindred birds.* London: Witherby.

Hartlaub, G. 1877. *Die vögel Madagascars.* Halle: Schmidt.

Jouanin, C. 1962 Inventaire des oiseaux éteints ou en voie d'extinction conservés au Muséum de Paris. *Terre Vie* 109: 257–301.

Loustau-Lalanne, P. 1963. Sea and shore birds of the Seychelles. *Seychelles Soc. Occ. Publ.* 2.

Newton, E. 1867. The land-birds of the Seychelles Archipelago. *Ibis* 9: 335–360.

Newton, R. 1958. Ornithological notes on Mauritius and the Cargados Carajos Archipelago. *Proc. Roy. Soc. Arts and Sci. Maurit.* 2(1): 39–71.

Peters, J. L. *et al.* 1931–70. *Check-list of birds of the world.* 1–7, 9–10, 12–15. Cambridge, Mass: Mus. Comp. Zool. Harv.

Rand, A. L. 1936. The distribution and habits of Madagascar birds. *Bull. Amer. Mus. Nat. Hist.* 72(5): 143–499.

Rountree, F. R. G., Guérin, R., Pelte, S., & Vinson, J. 1952. Catalogue of the birds of Mauritius. *Bull. Maurit. Inst.* 3: 155–217.

Vaurie, C. 1965. *The birds of the palearctic fauna. Passerformes.* London: Witherby.
Warren, R. L. M. 1966. *Type-specimens of birds in the British Museum (Natural History).* London: Brit. Mus. (Nat. Hist.).
Watson, G. E., Zusi, R. L., & Storer R. E. 1963. *Preliminary field guide to the birds of the Indian Ocean.* Washington: Smithson. Inst.

Postscript

Bubulcus ibis sechellarum (Salomonsen): There is a specimen in Cambridge labelled "Indian Ocean, *H.M.S. Rapid*, December 1864". Dr. D. R. Stoddart, of the Department of Geography, Cambridge, put me in touch with the Public Record Office, where thanks to J. Walford I was able to consult the log of the Voyage of *H.M.S. Rapid* in question. She left Mauritius on 26th October 1864, and arrived at Zanzibar on 17th January 1865. On 1st December 1864, she was at Mahé, in the Seychelles, and visited the Amirantes (to as far south as Alphonse) between the 4th and 10th, when she returned to Mahé, leaving the Seychelles for Zanzibar on the 22nd. It can be reasonably assumed that this specimen was collected in the Seychelles or the Amirantes. Its interest is that, although it has its full complement of primaries, its wing-length is 216 mm. only, thus considerably less than in other specimens from Aldabra, Farquhar atoll and the Seychelles (Benson and Penny, 1970). Furthermore it has some golden cinnamon rather than ginger-buff feathers on the crown. It seems wise to recognise *sechellarum*. It would appear to be of Asiatic origin, like *Ixobrychus sinensis* in the Seychelles, and to be derived from *B. i. coromandus*. It occurs in the Seychelles, and perhaps in the Amirantes and on Farquhar, though a small sized specimen from Aldabra is like *B. i. ibis* in colour (Benson and Penny, *op. cit.*). For other recent references to this question, see Vaurie (1965: 65) and Benson (1967: 95).

There are three other specimens in Cambridge collected during the same voyage of *H.M.S. Rapid*, all dated December 1864:— *Ardea cinerea*, "Amirante Islands"; *Butorides striatus*, "Amirante Islands, *H.M.S. Rapid*"; and *Gygis alba*, "Indian Ocean, *H.M.S. Rapid*". The first two are mentioned by Benson (1967: 67–68).

Porphyrio madagascariensis (Latham): Rountree *et al.* (1952: 180) consider its status on Mauritius controversial. They quote E. Newton that it should be considered an endemic resident, though he (*Trans. Norfolk and Norwich Nat. Soc.* 4, 1888: 552) suggests that it was possibly introduced. It seems much more likely that it arrived unaided by man, as have so many other Rallidae on oceanic islands. Long African experience leads me to believe that this species is never normally handled by man. There is a female in Cambridge labelled "Mapou, Mauritius, 10th August 1860, eggs size of no. 4 shot", this last item suggesting that the oocytes in the ovary were of diameter about 3 mm. Watson *et al.* (1963: 143) list *P. alleni* from Mauritius, but presumably really intended *P. madagascariensis*. The occurence of *alleni* is rejected by Rountree *et al.* (1952: 157). Neither species is mentioned by R. Newton (1958). Possibly *madagascariensis* has died out on Mauritius, though it is easily overlooked.

Psittacula eupatria wardi (E. Newton): Material of this extinct form has been discussed above. Greenway (1967: 332) records its representation in New York. G. S. Keith (pers. comm.) informs me that there is a female in the American Museum of Natural History, lacking the black collar, wing 182 mm. Like the specimens in London, it was received from H. B. Tristram, and was collected by H. L. Warry somewhere in the Seychelles in June, 1881.

Some notes from the Arusha National Park

by J. S. S. Beesley

Received 1st October, 1970

The following observations from the Arusha National Park seem worthy of publication. I first visited the Park in 1961, then regularly from 1964 until 1968 when I was appointed Park Warden and resided in it. The Park covers an area of some 50 square miles, and is situated at ca. 3° 15′ S., 37° 00′ E. The lowest point is at 4,600 feet above sea-level, but the summit of Mt. Meru, at nearly 15,000 feet, is also in the area. Unless otherwise indicated, all the observations are from below 6,500 feet. The nomenclature followed is that of Mackworth-Praed & Grant (1952–55).

Ardeola idae, Madagascar Squacco Heron: One in white breeding dress was seen on 2nd October 1968 on the edge of a swamp, and another such on 21st October 1969 at a temporary pool in grassland. The most recent reference to the occurrence of this species in Africa is by Irwin (1969). The two birds which I saw were presumably on passage back to Madagascar.

Ciconia nigra, Black Stork: Since 1965 a single bird, possibly always the same individual, has been seen regularly between late October and early March, at temporary pools both in open grassland and forest. Presumably this is a case of a migrant from the Palaearctic. Indeed in accordance with Benson *et al.* (1970: 4) it would be the southernmost record in modern times, even though the species does of course also breed in southern Africa. (Apart from the Kenya records given by Benson *et al.*, Prof. Dr. E. Schüz has drawn attention to one of a bird ringed in Pomerania and recovered in northern Uganda, see *Vogelzug* 11, 1940: 24 and *Vogelwarte* 22, 1964: 300—Ed.)

Falco peregrinus, Peregrine: Two occupied breeding sites have been observed, on the cliffs of the Ngurdoto and Meru craters. In the case of the former very small young were seen being fed in September, indicating egg-laying in August, thus agreeing with Brown & Amadon (1968: 855) for Kenya.

Buteo rufofuscus, Augur Buzzard: Altogether six occupied nesting sites have been seen, all of which were in trees, despite the presence of many crags, and thus agreeing with the observations of Brown & Amadon (1968: 630). One occupied nest held eggs in September, thus agreeing with Brown & Amadon, who also give egg-laying in Tanzania in October to November. However, the other five records, of small young or eggs, indicate egg-laying in March to May, i.e. during the rains, *contra* Brown & Amadon.

Apus niansae, Brown Swift: A male, now in the University Museum of Zoology, Cambridge, identified by C. W. Benson, was collected as it flew out of a crevice in a cliff-face on 31st March. Its wing-length is 148 mm only, thus agreeing with figures for this species in Brooke (1969: 15). Some thirty individuals were regularly seen at all times of the day around this cliff-face from March to May, and it is presumed that they were breeding. Mackworth-Praed and Grant (1952: 779) give breeding as probable in Tanzania in December and January.

Lybius melanopterus, Brown-breasted Barbet: The only breeding record in Mackworth-Praed & Grant (1952: 709) is "Mt. Kilimanjaro foothills, February". Three occupied nesting holes have been found, to each of which parents were seen bringing food, in January (one) and June (two). This species is common in the Park below 5,500 feet, in broad-leafed woodland.

Locustella fluviatilis, River Warbler: An unsexed specimen was obtained on

25th April 1968 at Lake Momela. It is now in the British Museum (Natural History), and has been identified by Mrs. B. P. Hall.

Cisticola robusta, Stout Cisticola: Two collected specimens were sent to the Field Museum of Natural History, Chicago, and have been reported on by M. A. Traylor. They are unusually pale compared to specimens from the Kenya highlands, though a few do approach them in pallor. Furthermore, five other specimens from northern Tanzania (Monduli, Loliondo and vicinity of Kilimanjaro), in the British Museum (Natural History) which were lent to Traylor could not be separated at all from paler Kenya specimens. There is therefore no justification for recognising a distinct subspecies.

Hirundo senegalensis and *smithii*, Mosque and Wire-tailed Swallows: Shortly after the first buildings in the Park were completed in 1963, pairs of *Hirundo smithii* arrived to nest on the walls. After the first brood or two had been raised, pairs of *senegalensis* arrived and took over newly completed nests, which they enlarged for themselves. This did not deter the smaller swallows, who started building again nearby on the same walls. In one case, where the nest of a pair of *H. smithii* was taken over, the original owners built their new nest onto the side of the almost completed nest of the pair of *H. senegalensis*. When the larger birds completed their nest they were ousted by a pair of *Apus caffer* White-rumped Swifts. The result was that the two pairs of birds, *Apus caffer* and *H. smithii*, reared their young in adjacent nests with no gap between them, despite continual bickering. It is also interesting to note that these two nests were inside the gate-house, which was completely shut up at dusk (19.00 hrs.) and not opened until after dawn (06.30 hrs.).

Buphagus sp., Oxpecker: Both *B. africanus* and *erythrorhynchus* occur. On a date unrecorded, several undividuals of one or the other were seen on a giraffe *Giraffa camelopardalis* at 22.00 hrs., thus more than three hours after sunset. This agrees with the observation by Dowsett (1968), who found that both species occasionally roost on game animals at night.

On one occasion one or the other species has been seen to attempt to alight on a bushbuck *Tragelaphus scriptus*, an abundant species in the Park. The bushbuck objected, and shook the oxpecker off. Attwell (1966: 33) was unable to give any record in nature of such an association.

References:
Attwell, R. I. G. 1966. Oxpeckers, and their associations with mammals in Zambia. *Puku* 4: 17–48.
Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. Stuart 1970. Notes on the birds of Zambia: Part V. *Arnoldia (Rhodesia)* 4(40).
Brooke, R. K. 1969. *Apus berliozi* Ripley, its races and siblings. *Bull. Brit. Orn. Cl.* 89: 11–16.
Brown, L. H., & Amadon, D. 1968. *Eagles, hawks and falcons of the world.* London: Country Life.
Dowsett, R. J. 1968. Oxpeckers *Buphagus* spp. on game animals at night. *Bull. Brit. Orn. Cl.* 88: 130–132.
Irwin, M. P. Stuart. 1969. *Ardeola idae* Hartlaub in Rhodesia. *Bull. Brit. Orn. Cl.* 89: 3–4.
Mackworth-Praed, C. W. & Grant, C. H. B. 1952–55. *Birds of eastern and north-eastern Africa*, Vols. 1, 2. London: Longmans.

An African Pitta, *Pitta angolensis longipennis*, from Ethiopia

by Emil K. Urban & T. Hakanson

Received 9th November, 1970

On 3rd July 1970 in the main rain season (June–September) of Ethiopia an African Pitta, *Pitta angolensis longipennis* (Reichenow), was collected in a forest of young eucalyptus, 10 km west of Addis Ababa, 2,440 m, 9° 3′ N., 38° 40′ E.

A small local boy observed the bird at 11 a.m. hopping on the ground under the trees which were 10 m tall. He shot the bird with a sling-shot and brought it to Mr. S. Pohlstrand, Addis Ababa, who kindly prepared the specimen and presented it to the Biology Department (Natural History Museum), Haile Sellassie I University, Addis Ababa. The specimen is a male (gonads "very small"; immature?) with culmen 22 mm; wing 122; tarsus 34; rectrix 34.

The record, the first for the species in Ethiopia (Urban and Brown, in press), is either that of a vagrant or is representative of a considerable extension in range. Benson and Irwin (1964) point out that the species is a long-distance migrant, breeding south of 8° S and migrating north to the vicinity of the equator in East Africa and to about 4° N in the Congo from April to September. These authors note that in East Africa the African Pitta has been recorded from Nairobi and Limuru in Kenya and Budongo, Bugoma, Mabira and Mulema in Uganda.

The Ethiopian specimen, therefore, extends the non-breeding range in eastern Africa approximately 900 km northward to approximately 9° N.

References:

Benson, C. W. & Irwin, M. P. S. 1964. The migrations of the Pitta of Eastern Africa (*Pitta angolensis longipennis* Reichenow). *N. Rhodesia J.*, V (5): 465–475.

Urban, E. K. & Brown, L. H. In press. *A checklist of the birds of Ethiopia.* Haile Sellassie I University Press, Addis Ababa.

Further notes on the Spike-heeled Lark *Chersomanes albofasciata* in East Africa

by J. S. S. Beesley

Received 10th Octobor, 1970

Since discovering this bird in November 1965 in the Asogati (Kingerete) plain 30 miles north of Arusha, Tanzania (Benson, 1966), I have searched all the grass plains within a seventy mile radius of Arusha and have found it on only one other locality. This is a sloping plain between 4,800 and 5,100 feet above sea-level six miles west of Oldonyo Sambu village, which is 20 miles north of Arusha. This locality is ca. 12 miles from the Asogati plain. Both habitats are precisely the same regarding the soil and formation of grassland, and in detail dissimilar from all the other grass plains examined. In view of the bird's apparent rarity and its confinement to this very particular biotope, I now describe the habitat in detail.

The plains are situated to the north of Mt. Meru at an altitude between 4,500 and 5,100 feet above sea-level. The rainfall is very light, occuring only for a few days during the short and long rains of October–December and March–April. During the rest of the year very strong winds scour the area. The soil is calcimorphic, light and shallow, overlying a calcareous hard-pan, allowing only the development of an edaphic grassland. The grass is short with a leaf-table at 5–8 cm and culms rising to ca. 40 cm. Its coverage is about 50% and it grows in the form of cushions some 20–30 cm across, surrounded by wind-eroded channels of bare, hard, generally stoneless soil. These channels or lanes are used by the larks as pathways, along which they run, and may be important, for this fast-running bird does not frequent grassland lacking these channels or with large open areas between the grass cushions. The dominant grasses are *Digitaria macroblephara*, *Eustachys paspaloides*, and *Sporobolus marginatus*, also occurring are *Dactyloctenium* sp., and *Cyperus* spp. Other plants commonly found are *Indigofera* sp., *Ipomea longituba*, *Monodenium* sp., *Ramphicarpus* sp., and *Dipcadi viride*. Other birds breeding in the area are few, namely, *Mirafra africana*, *Calandrella rufescens*, *Calandrella cinerea*, *Anthus novaeseelandiae* and *Oenanthe pileata*.

Breeding of the Spike-heeled Lark takes place after the first few showers of rain. Two nests were found. The first, on 15th April 1967, was situated in a flat plain, and contained two large, well-feathered young who filled the nest. The parents were feeding them with insects, and executed a bouncing approach flight, uttering a repeated twanging chirp. The second nest was found on 7th November 1967 and was situated somewhat in the lee of the prevailing wind at the base of a low hill, and contained two fresh eggs. Both nests were shallow cups of dead grass, lined with coarse dead grass leaves and small scraps of cow-dung. The eggs, measuring 21.5 mm × 15 mm, were off-white, the whole surface speckled with fine irregular spots of dull brown and purplish grey, with occasional slightly larger, light brown blotches, and zoned at the larger end. On 17th May 1967 two pairs were seen feeding fledged young with caterpillars. These latter two breeding dates agree with Benson & Forbes-Watson (1966).

When not breeding, the birds are found mainly in two's and three's, but sometimes in parties of up to ten. In 47 *recorded* sightings of this species, I have only seen singletons twice, which seems to indicate they they remain in pairs throughout the year or are somewhat gregarious.

References:

Benson, C. W. 1966. The Spike-heeled Lark *Chersomanes albofasciata* in East Africa. *Bull. Brit. Orn. Cl.* 86: 76–77.

Benson, C. W. & Forbes-Watson, A. D. 1966. A further note on the Spike-heeled Lark *Chersomanes albofasciata* in East Africa. *Bull. Brit. Orn. Cl.* 86: 172–173.

Nasal glands in *Cinclodes nigrofumosus*, a maritime passerine

by Raymond A. Paynter, Jr.

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The furnariid *Cinclodes nigrofumosus* is a resident of rocky areas on the coast of Peru and Chile. Its behaviour resembles that of a shorebird, particularly the Surfbird (*Aphriza virgata*), as it feeds among rocks and in sand, dodging waves and spray while calling loudly above the noise of the pounding breakers. For most of its range the species occurs at the edge of the rainless coastal desert, where the only source of water is the sea. Its maritime existence even exceeds that of most shorebirds, for it builds its nest of marine algae in crevices of rocks close to the water (Tovar, 1968).

As is now well known, most seabirds are able to tolerate a high salt intake by extrarenally excreting excess sodium chloride in a highly hypertonic solution by means of the paired nasal glands, which are enlarged and function as the so-called "salt glands". Some passerine birds, as for example a salt marsh race of the Savannah Sparrow, *Ammodramus sandwichensis beldingi*, are also capable of existing on sea water. However, as far as is known, no passerine has a functional salt gland; those species subject to heavy salt loads seem instead to rely on the kidneys, and possibly the gut and cloaca, to produce urine with a chloride concentration far in excess of that which can be excreted by species not normally exposed to saline water (Poulson and Bartholomew, 1962; Cade, 1964).

On a recent visit to Peru I observed *Cinclodes nigrofumosus* very briefly but long enough to appreciate that it is almost certainly the most maritime of all passerine birds. It occurred to me that if functional salt glands do exist among the passerines, in all likelihood they would occur in this species. Manuel A. Plenge, of Lima, kindly agreed to collect specimens for anatomical examination. Two birds were secured on 23rd May 1969 at Playa Leon Dormido, about 85 km south of Lima. Both specimens are females with slightly enlarged ovaries. The stomach of one contained mostly fine sand with fragments of crustaceans (presumably decapods), as well as an almost microscopic bivalve. The stomach of the other also contained sand, as well as several small (5 mm) crabs, unidentifiable crustacean fragments, and a single small isopod.

The nasal glands are small, rimming the dorsal edges of the orbits in a position described by Technau (1936) as "exorbital", or type "IId" in his system of classification. Each gland is approximately 18 mm long, meaning that it edges about half of the orbit. It has a maximum width of 1.3 mm and a maximum thickness of .3 mm. The gland does not differ in gross morphology from that of other passerines, and seems to be of the same relative size as, or smaller than, exorbital glands in species which presumably do not have to cope with excessive salt loads. For example, *Cinclus cinclus*, which is approximately the same size as *Cinclodes nigrofumosus*, has a nasal gland of very similar dimensions (Technau, 1936: 595), while a specimen of House Wren (*Troglodytes aedon*) from Colorado, a species less than one-quarter the size of *Cinclodes nigrofumosus*, has a relatively larger gland, measuring approximately 9 mm in length and .7 and .3 mm in breadth and depth, respectively (pers. observ.). While the small size of the gland in *Cinclodes nigrofumosus*, and its morphological similarity to that of other passerines, is not conclusively indicative that it is not a salt-excreting organ, it is difficult to conceive of it as having this function when one considers the gland's enormous size and distinctive appearance in seabirds.

In contrast to the diminutive nasal gland, the Harderian gland in *Cinclodes nigrofumosus* is of a substantial size, covering about one third of the orbital wall. This is characteristic of many marine birds. Apparently the viscous secretion of the Harderian gland is produced copiously in orded to protect the eye from irritation by sea water.

References:
Cade, T. J. 1964. Water and salt balance on granivorous birds. In Wayner, M. J. (Ed.), *Thirst* (*Proc. 1st Intern. Sympos. on Thirst in the Regulation of Body Water*): 237–256.
Poulson, T. L. & Bartholomew, G. A. 1962. Salt balance in the Savannah Sparrow. *Physiol. Zool.* 30: 109–119.
Technau, G. 1936. Die Nasendrüse der Vögel. *Journ. Ornith.* 84: 511–617.
Tovar, H. 1968. Areas de reproducción y distribución de las aves marinas en el litoral Peruano. *Bol. Inst. Mar. Peru* 1: 523–546.

Some errors concerning eggs of Somalia birds

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by C. J. O. Harrison & M. P. Walters

In examining material collected by Sir Geoffrey Archer in Somaliland some errors in identifications of eggs have become apparent.

Archer (1961) collected a clutch of three eggs in British Somaliland (Somalia) and ascribed these to the "Somaliland Cinnamon-rufous Long-billed Lark," *Mirafra somalica* (= *Certhilauda somalica*). Lord Rothschild purchased a collection of eggs of Somaliland birds from Archer; and when this was bequeathed to the British Museum (Natural History) two clutches, a clutch of three with the set-mark 550, and a clutch of one with the set-mark 551, were registered as belonging to this species. Both were registered under the number 1941.3.5.97. The second clutch has been recently re-registered as 1951.3.5.134.

These four eggs were referred to by Mackworth-Praed & Grant (1955) as the only known clutch of eggs, and breeding was stated to occur in British and Italian Somaliland. Archer (1961) assumed that this "clutch" of four differed from his earlier one of three eggs, and must therefore have come from Italian Somaliland.

Archer's description of his clutch of three would appear to tally with two of the three eggs, and the remaining single egg. His measurements appear to be slightly incorrect. In addition the colour plate in his work illustrates an alleged egg of this species (pl. 27, no. 15) which is actually the egg of a bulbul, almost certainly *Pycnonotus barbatus somaliensis*. This egg is in the collection of the British Museum (Natural History), reg. no. 1969.8.94.

Since three of the four eggs were given the set mark 550, presumably by Archer, they were therefore considered to be the clutch of three. The fourth is similarly marked 551. Of the three, two are very similar. They measure 21.8 × 16.7 mm and 21.8 × 16.2 mm. Both have a white ground colour with numerous fine markings, mostly spots or flecks of brown, reddish brown and violet, tending to be concentrated in a zone around the larger end. The other egg of the three tapers more than the other two and measures 23.4 × 16.4 mm. Its ground colour has a distinct greenish tint, and the markings are similar to those of the other two but light brown flecks are more in evidence. The remaining single egg is more similar in colour to the first two of the clutch of three than is the third egg of the clutch. It is narrow with a pronounced taper, and measures 23.3 × 15.3 mm. It has a white ground colour, the spots being sparser and more distinct, and more often rufous or light brown than on the first two. There is no distinct zone at the larger end. At present, apart from Archer's statement that he found a clutch of three, and the existence of these four eggs, concerning which there may be doubts about the division into clutches, there would appear to be a lack of data on the nest and eggs of this species.

Another problem arises concerning the identification of some crows' eggs. Two clutches taken by Archer in 1918–1920 were identified by him as *Corvus corax edithae*, a small race of the Raven, parasitised by *Clamator glandarius*, the two species being indicated by different set-marks. The eggs came to the museum through the Rothschild Collection and were registered simply as *C. c. edithae*.

A single crow egg with three cuckoo eggs, reg. no. 1941.3.5.67, collected at Ariarleh on 18th May 1920, measures 48.4 × 32.1 mm, and shows a marked taper towards the narrow end. The ground colour is pale blue-green and the egg is densely splashed and speckled with brown and lilac-grey markings which tend to show longitudinal elongation and are slightly concentrated towards the larger end. There are no eggs of *C. c. edithae* in the collection to which this approximates in size and markings, but it bears a close similarity to eggs of *C. rhipidurus* which also nests in Somalia, and S. A. Parker had tentatively identified the egg as belonging to that species.

The second clutch, reg. no. 1941.3.5.112, collected at Suksode on 4th June 1918, consists of two crow eggs and two cuckoo eggs. One crow egg measures 43.6 × 31.5 mm and has more a rounded shape than the egg in the previous clutch; while the other is damaged at one end but is very similar to the first and appears slightly larger and more rounded, having a breadth of 32.6 mm. Both eggs are pale greenish blue with sparsely distributed, large irregular markings of brown and lilac, together with more numerous very fine spots and specks. In size and markings these eggs are quite unlike those of *C. rhipidurus* and rather dissimilar to those of *C. c. edithae*. They are, however, a good match for the eggs of *C. albus*, a tentative identification with which C. R. S. Pitman, who has had more experience of the eggs of these species, also concurs. Archer records the presence of *C. albus* in this region but regards it as an infrequent visitor. Assuming the identification is correct, this may be the first evidence of breeding in this area.

The eggs of *C. c. edithae* in the collection are rather variable in shape, but small. They are usually marked, although often very sparsely, with fine spots or thin streaks and lines. The measurements for fifteen eggs are—average 41.1 × 29.2 mm; maxima *43.7* × 29.8, 39.1 × *31.8*; minima *39.1* × 31.8, 43.5 × *27.8* mm. It will be noted than an increase on one dimension tends to be matched by a decrease on the other.

References:
Archer, G. & Godman, E. M. 1961. Birds of British Somaliland and the Gulf of Aden. Vol. 3. Edinburgh: Oliver & Boyd.
Mackworth-Praed, C. W. & Grant, C. H. B. 1955. Birds of Eastern and North-eastern Africa London: Longmans.

The Starred Bush Robin *Pogonocichla stellata* in eastern Rhodesia and adjacent Mocambique

by Michael P. Stuart Irwin

Received 9th November, 1970

Taxonomy

Pogonocichla stellata chirindensis (Roberts), 1914, *Ann. Transvaal Mus.*, 10: 176, with type locality Mount Selinda, has in recent years always been regarded as a synonym of *P. s. transvaalensis* (Roberts), 1912, *Journ. S. Afr. Orn. Un.*, 8: 21, described from Woodbush Forest Reserve in the north-eastern Transvaal. This is derived from the thorough revision and analysis provided by Moreau (1951: 383–400), and by Clancey (1969: 253–256), who has most recently reviewed racial variation in this species in south-eastern Africa. Clancey concluded that *chirindensis* was a synonym of *transvaalensis*, even though the Mount Selinda population was separated from that in the Transvaal highlands by over some 250 miles of ecologically unsuitable country. At this same time, however, Clancey described *P. s. hygrica*, with type locality Gorongosa Mountain in Moçambique, but also ranging southwards in the highlands of eastern Rhodesia (and by inference Moçambique), from Inyanga to the Chimanimani Mountains and Melsetter, and thus to within forty miles of the Mount Selinda population, with which there is at first sight no apparent geographical or ecological barrier.

However, it would seem that no adequate series of *chirindensis* topotypes has been collected in recent years; the majority of specimens available, and scattered among a number of museums, being those obtained by Swynnerton in the first decade of the present century. In late September and the first few days of October 1970 the writer and R. P. Borrett collected eleven specimens in the Chirinda Forest at Mount Selinda, the majority of which were then in breeding condition. Previously the only material in the National Museum of Rhodesia had been two old Swynnerton skins obtained in June 1906, another September skin collected in 1960, and one in an immature olive plumage (see Moreau, 1951: 390). When our freshly collected material was compared with twenty-nine specimens of *hygrica* from eastern Rhodesia, from the Chimanimani Mountains, and Melsetter northwards, and eight from Gorongosa Mountain, the differences separating the two populations became obvious, *hygrica* being darker, more saturated in colour on the mantle, but the Mount Selinda birds altogether brighter, more yellowish green above. Neither series agreed with the description of *transvaalensis* as given by Clancey, nor did the Mount Selinda birds agree with two *transvaalensis* in the National Museum from Haenertsburg in the north-eastern Transvaal. Thanks to Mr. P. A. Clancey, Director of the Durban Museum, I have been able to examine a further four specimens of this form from the Ngome Forest, Louwsberg District, and the Woodbush and Mac Mac Forest Reserves, in the north-eastern Transvaal, as well as specimens of nominate *stellata* and *P. s. margaritata* of still further south, and another old Swynnerton specimen of *chirindensis*.

When *hygrica*, the Mount Selinda birds and *transvaalensis* are compared, the distinctiveness of the Selinda birds is apparent, as is that of *hygrica*. *P. s. hygrica* on the back is rather similar to *transvaalensis* and relatively saturated in tone. Below, however, the South African forms, excepting the nominate, are more orange-yellow on the chest and abdomen compared with the clearer lemon-yellow of *hygrica* and *chirindensis*. In this respect the latter two are similar to *P. s. orientalis* from north of the Zambezi, but which also differs more saliently in other characters. Although long relegated to the synonymy, *P. s. chirindensis* must now be recognised as a relatively distinctive race, separable from the adjacent *hygrica* on the colour of the back and from *transvaalensis* on both the colour of the back and underparts.

Post mortem cabinet colour changes are however evident, and this factor appears to have precluded the recognition of *chirindensis* in the past. Thus three Mount Selinda specimens collected in 1906 are saturated above and lack the yellowish green tones, and are more orange-yellow below, for all intents and purposes indistinguishable from relatively fresh specimens of *transvaalensis*. The clearer yellow and more greenish tones have apparently been lost. Clancey further states that a number of specimens from Rhodesia and even Gorongosa Mountain, collected alongside *hygrica*, represent *transvaalensis*. Eleven specimens in the National Museum are so marked by him. But significantly these are all old, or relatively old, ones, having been collected in 1906 (two), 1935, 1948, 1950 (two), 1951 (two), 1952, 1958 and 1960, whereas most of the remainder are much more recent in origin, no less than twenty-eight having been obtained by the writer within the last six years. Furthermore, seven out of eleven birds attributed to *P. s. transvaalensis* were collected in montane forest in the breeding season between September and January, when that form would be on its own breeding grounds. I prefer to attribute all eleven to *P. s. hygrica*, from which they do not appear to differ in any really significant way, although they may have undergone some slight *post mortem* change. The same applies to the three 1906 specimens, but which show a more marked change.

The populations and their movements

P. s. hygrica: That this species undergoes seasonal movements is now well established. Oatley (1966: 415–416) has demonstrated that this is a widespread phenomenon from Natal northwards to north-eastern Tanzania, while Benson & Irwin (1967: 73–74) provide further evidence for Zambia and Malawi. Still further information can now be given for *hygrica*. At 6,000 feet in the forests on Mount Inyangani at 18° 17′ S., 32° 55′ E. in the period October–November 1966, at the commencement of the breeding season, I found it especially abundant. In the same forest in March 1970, there was no sign of it except for a solitary bird mist-netted on the 16th of that month. This individual, an adult, was in an exceptionally heavy state of moult and in the process of replacing all the primaries and secondaries simultaneously, with wing only 66 and tail 45 mm. It is doubtful if it could have moved at all in this condition and may at one stage have been flightless. In the foothills of these same highlands at 18° 23′ S., no less than eight specimens have been taken between the 18th July and 30th August at between 2,200 and 3,300 feet, and the latest high altitude record for the Inyanga area is in late January. Similarly, above 5,000 feet in the forest patches of the Stapleford Forest Reserve at 18° 41′ S., 32° 51′ E., there was no sign of it in June 1967, as would be expected, but in the Banti Forest Reserve at 19° 20′ S., 32° 47′ E., at a similar altitude, they were abundant in the first two weeks of September in the same year. That these highlands are not entirely vacated is shown by a specimen from Melsetter, 19° 45′ S., 32° 52′ E., at 5,900 feet as early as 13th August, and another from the Vumba, 19° 07′ S., 32° 46′ E., at c. 5,000 feet on 30th April. This kind of situation may be expected, as such movements in many instances may only involve travelling a few miles.

P. s. chirindensis: There is perhaps far less need for any seasonal movement in this population than in *hygrica*. As presently known *chirindensis* must breed between 3,000 and 4,100 feet in the Chirinda Forest at Mount Selinda at 20° 25′ S., 32° 43′ E., and undoubtedly also in the other smaller forest patches at around the same altitude between there and Chipinga at 20° 12′ S., 32° 38′ E., where I observed one on 26th March 1953. It is likely too that *hygrica* breeds no lower than about 4,000 feet, so that the differences in the forest environment occupied by these two forms is very considerable. Wild & Fernandes (1967: 4, 10–11) classify the Mount Selinda forest as "*moist evergreen: at low and medium altitudes*" (type 1), whereas *hygrica* occupies "*moist broad leaved forest* (*montane*)*: at high altitudes*" (type 7). The differences between these two types of forest are considerable, largely due to that in altitude, which especially affects the temperature, Mount Selinda being much more tropical in character.

That *chirindensis* may be quite sedentary is indicated by Swynnerton (1907: 66–67), who records that he examined the stomachs of no less than seventeen birds trapped between May and the beginning of July, and gives no indication of a seasonal exodus (these specimens are all in the British Museum, and are all labelled as from Chirinda at 3,900 or 4,000 feet). Furthermore the record by Swynnerton (1908: 86) of a female with very strongly developed ovaries on 10th August (when *hygrica* would be on its wintering grounds), indicates perhaps an earlier breeding season, and the presence there of a young bird in spotted dress in July that may have come from a late brood. (This would be the bird referred to by Moreau, 1951: 389, as *transvaalensis* in spangled dress. It cannot at present be found in the British Museum, where it should be. But there is no reason to doubt the record). Yet in August Swynnerton recorded the species as very common in dense bush in the lower Jihu at c. 2000 feet in neighbouring Moçambique. (These specimens are in the British Museum and are labelled Kurumadzi River, Jihu, 10th August 1906). The Kurumadzi is a tributary of the Xinica River in Moçambique, although it has its source in the Chirinda Forest, and may be placed at approximately 20° 31′ S., 32° 46′ E. As it is now over sixty years since these specimens were collected it is not possible to identify them subspecifically, but such birds are more likely to be wintering *hygrica*. On the other hand there is a single specimen in the National Museum obtained on the Makurupini River near the Lusitu-Haroni confluence at 20° 02′ S., 33° 02′ E. at an altitude of only 1,400 feet, on 26th August 1969. It is quite clearly referable to *chirindensis* and may have been derived from forest patches lying south of the Lusitu River in Moçambique where this form is very likely to occur, and it seems unlikely that it came from anywhere near Mount Selinda. It is also just possible that wintering *hygrica* may on occasion occupy the same range as *chirindensis*.

Although existing in such close geographical proximity it would seem that these two races must be isolated reproductively, and that there can be little if any gene-flow between them. Great differences must also exist in the size of each population. While it is difficult to estimate with any degree of accuracy the extent of the habitat available to each race in Rhodesia and Moçambique, *hygrica* may possibly occupy as much as 250 square miles of montane forest. *P. s. chirindensis* is much more restricted in this respect in both overall range and the area of habitat available. The Chirinda Forest at Mount Selinda comprises only some 3,700 acres, and even considering forest patches elsewhere in the Chipinga District and neighbouring high ground in Moçambique, it is most unlikely that such mid-altitude forests would exceed a dozen or so square miles in area. Assuming roughly similar population densities in the two types of forest, the total number of individuals of *chirindensis* may be as little as one-twentieth of that of *hygrica*. The small size of the former may have hastened its differentiation from *hygrica*.

The population of Mount Selinda and the surrounding country may have become more or less effectively isolated since the end of the Pleistocene or about 15,000 years ago (Moreau, 1966: 59–60). Prior to this the forest in the Chipinga District must have been more like that now occupied by *hygrica*, and consequently any population then living there would have been subject to seasonal movements. *P. s. chirindensis* could therefore have started to evolve with the onset of the warmer conditions of the present period, when the necessity for seasonal movement would have been gradually reduced, and finally ceased, thus leaving *chirindensis* effectively isolated from the population of *hygrica* in the highlands to the north of the Lusitu River in the Melsetter District and the Chimanimani Mountains, northwards in eastern Rhodesia and adjoining Moçambique.

Finally, in parenthesis, it is worth drawing attention to an aberrant specimen in the British Museum trapped by Swynnerton in the Chirinda Forest at 4,000 feet on 28th May 1905, and mentioned by him (1908: 87). As it now appears, all the normal yellow coloration has been replaced by creamy white, and the green of the upperside by a slightly greenish grey.

Summary

Using freshly collected material, *Pogonocichla stellata chirindensis* of Mount Selinda, south-eastern Rhodesia, is found to be a valid form. It differs from *hygrica*, of further north in eastern Rhodesia and Moçambique, and *transvaalensis* of the north-eastern Transvaal, in being a brighter, less dark, green above. *P. s. transvaalensis* is orange-yellow below, rather than lemon-yellow as in *chirindensis* and *hygrica*. *P. s. hygrica* has off-season movements to lower levels, whereas *chirindensis* appears to be sedentary. But *hygrica* breeds in montane forest, probably never below 4,000 feet, whereas *chirindensis* seems confined to moist evergreen forest at 3,000–4,000 feet. The population of *chirindensis* is thought to be only about one-twentieth of that of *hygrica*. The latter may have been evolved in the last 15,000 years, with the onset of warmer conditions.

Acknowledgment

My thanks are due to Mr. C. W. Benson for providing helpful comments, and for examining, on my behalf, any material in the British Museum (Natural History) which is mentioned.

References:

Benson, C. W. & Irwin, M. P. S. 1967. A contribution to the ornithology of Zambia. *Zambia Mus. Pap.*, no. 1.

Clancey, P. A. 1969. Miscellaneous taxonomic notes on African birds XVII. *Durban Mus. Novit.*, 8(15): 227–274.

Moreau, R. E. 1951. Geographical variation and plumage sequence in *Pogonocichla*. *Ibis* 93: 383–401.

— 1966. *The bird faunas of Africa and its islands*. London: Academic Press.

Oatley, T. B. 1966. Competition and local migration in some African Turdidae. *Ostrich* suppl. 6: 409–418.

Swynnerton, C. F. M. 1907. On the birds of Gazaland, Southern Rhodesia. *Ibis* 49: 30–74.

— 1908. Further notes on the birds of Gazaland. *Ibis* 50: 1–107.

Wild, H. & Fernandes, A. 1967. *Vegetation of the flora Zambesiaca area:* Flora Zambesiaca supplement. Salisbury: M. O. Collins.

Variations in plumage of male and female White-crowned Manakins *(Pipra pipra)*

by F. Haverschmidt

Received 4th December, 1970

It is now known that adult females of the Golden-headed Manakin (*Pipra erythrocephala*) (Snow, 1962) and the Crimson-hooded Manakin (*Pipra aureola*) (Haverschmidt, 1965) sometimes have feathers characteristic of the male plumage.

This also applies for the White-crowned Manakin (*Pipra pipra*). The male of this species is glossy black all over except on the crown and the nape which are glossy white, while the female has dark olive green upperparts, except the upper head which is slate grey, while the underparts are dark greyish with a green tinge. The juvenile male is like the female.

When in the forest near Phedra (Surinam) on 6th April 1961 a small bird suddenly flew from the undergrowth. My first impression was that I had flushed it from its nest, but a prolonged search failed to locate it. I collected the bird that proved to be a *Pipra pipra* in the green plumage of the female, but with a number of black feathers in the coverts of the right wing and a black secondary in the right wing. At first glance I took it for a male in intermediate plumage and—as the male does not take part in the nest life—my presumption that I had flushed it from its nest seemed unjustified. When afterwards making a specimen of it I established to my surprise that it was a female with a well developed ovary.

As I reported previously (Haverschmidt, 1958) the male of *Pipra pipra* may be sexually mature before it has attained the full male plumage. Apart from the specimen mentioned in my earlier note I collected on 9th October 1960 at Zanderij (Surinam) a specimen in the green plumage of the female without any trace of the male's dress and another one near Phedra on 28th March 1965 in the female's plumage but with a few white feathers on the crown and a few black feathers on the chin and throat. Both birds had greatly enlarged testes.

Thus in *Pipra pipra* males in juvenile and intermediate plumage cannot be separated from adult females on the basis of plumage.

References:

Haverschmidt, F. 1958. Display of *Manacus manacus*. *Ibis* 100: 626.

— 1965. Variations in plumage of male and female *Pipra aureola*. *Auk* 82: 502.

Snow, D. 1962. A field study of the Golden-headed Manakin, *Pipra erythrocephala*, in Trinidad, W.I. *Zoologica* 47: 183–198.

On the Types of *Sporophila albitorquis* (Sharpe)

by Allan R. Phillips

Received 2nd November, 1970

Sharpe (1888: 120) proposed a new species *Spermophila albitorquis*, distinguished from *S. torqueola* only "by a white collar round the hind neck. Total length 4.4 inches, culmen 0.35, wing 2.25, tail 1.85, tarsus 0.6." Two specimens were listed, "♂ ad." skins in the British Museum (Natural History) from *a*. "Mexico. Sclater Coll." and *b*. "Capulalpam, S. Mexico, Oct. 1860 (*A. Salle*). Salvin-Godman Coll." The latter had already been described (as *S. torqueola*) by Salvin & Godman (1885: 352), who gave its measurements as "Long. tota 4.2, alæ 2.2, caudæ 2.0, tarsi 0.56;" they indicated Boucard as the actual collector and Oaxaca as the state. They also referred to an earlier mention of the bird by Sclater.

The supposed species attracted little attention until van Rossem (1934: 422) investigated its status. He wrote that "Number 85.2.10.121 . . . is ticketed as the type of this supposed species. It bears two tags, one a Sclater Museum label which reads 'Mexico Warwick' and on the reverse '625b of Cat./ 85.2.10.121'. The type tag bears the same data . . . Though not marked as to sex, the bird is an adult ♂ in fresh plumage. Sharpe's original description . . . lists two birds, specimen 'a' as above and specimen 'b' from Chapulapam [Oaxaca]. Neither was designated as the type. I could not find specimen 'b' . . . My own measurements of the single ♂ cited above accord closely with Sharpe's . . . I measure: wing, 57.0; tail, 48.0; exposed culmen, 9.1; tarsus, 14.8." He thought *albitorquis* probably "an intergrade much closer to *torqueola* than to *mutanda*" and suggested it be synonymized with *torqueola*. Hellmayr (1938: 186) gave the name as *albitorques* and wrote: "type in British Museum examined . . . Like van Rossem, I cannot see in the type of *S. albitorques* anything but an individual variant of *torqueola*."

Both of Sharpe's specimens, however, are still in the British Museum, and preference must be given to "*b*." for the following reasons: (1) It is the only one with any data; (2) It is the only subadult ♂, and in the best plumage; "*a*.", *contra* van Rossem, has the pale fuscous or brownish wings and tail of an immature, and its primaries show considerable wear; and, most conclusively; (3) it is the only one (again *contra* van Rossem) which fully agrees with Sharpe's measurements. In these tiny seed-eaters, variation in standard measurements is minimal; my own are 54.0 and 54.6 for the wing (chord) of *a*. and 56.0 mm for *b*., and for the tail 48.5 for *a*. and 49.3 mm for *b*. Only in total length do the two differ significantly: Warwick's skin, *a*., is stretched out and measures 120 mm or slightly over 4.7 inches, *vs.* 108 or nearly 4.3 for Boucard's (*b*.) which is thus much closer to Sharpe's "4.4 inches". I therefore select as lectotype specimen *b*., now British Museum (Natural History) number 85.12.14.402.

Parenthetically, this type is somewhat duller on the rump, sides, and flanks than fresh-plumaged specimens from Atlixco, Puebla, and farther west, and paler than most. It may represent a recognizable Oaxaca race. The other cotype appears to me, as to van Rossem and Hellmayr, to be ordinary *torqueola* in general colouration.

References:

Hellmayr, C. E. 1938. Catalogue of Birds of the Americas . . . Part XI . . . *Zool. Ser. Field Mus. Nat. Hist.*, 13, part XI.

Salvin, O., & Godman, F. D. 1879–1904. *Biologia Centrali-Americana. Aves.* Vol. 1. (Text).

Sharpe, R. B. 1888. *Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. Fringilliformes: Part III.* . . . London (*Cat. Birds Brit. Mus. Vol. III*).
van Rossem, A. J. 1934. Critical Notes on Middle American Birds. *Bull. Mus. Comp. Zool.* 77: 387–490.

An aberrant *Lamprotornis mevesii* with comments on the limits of the genus *Lamprotornis*

by R. K. Brooke

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The Instituto de Investigacao Cientifica de Angola in Sa da Bandeira has a female specimen (no. 27466) in moderately worn plumage of *Lamprotornis mevesii mevesii* (Wahlberg) collected by E. Pantes on 20th May 1969 at Cauaiala in the Huila district of Angola. It is entirely grey save for a slight purplish blue gloss, chiefly on the rectrices and remiges. The soft parts are nearly as dark as in normal birds. This aberrant specimen looks like a large, dark edition of *Cosmopsarus unicolor* Shelley of East Africa, though in that species the slight gloss on the remiges and rectrices is green, not bluish purple. Normal birds are highly iridescent blue and purple with a little bronze. The aberration is presumably due to a thickening of the translucent cells above the pigments, together with a reduction in the volume of melanin deposited. The thickening of the translucent cells would have the effect of reducing or eliminating the normal iridescence depending on the extent of the thickening.

If a simple genetic aberration can produce a bird looking like a member of another genus the question of the validity of separate genera arises. *Cosmopsarus* Reichenow 1879 with type species *C. regius* Reichenow is recognized by Amadon (1962), but White (1962) lumps it in *Spreo* Lesson 1831 with type species *S. bicolor* (Gmelin). But as pointed out by Clancey (1958) *Spreo* as constituted by either Amadon or White is a composite group. Shelley (1906) seems to regard the lack of dark undertail coverts in adults as the only generic character separating *Spreo* from *Lamprotornis* Temminck 1820 with type species *L. caudatus* (P. L. S. Mueller), and Amadon (1943) gives no very clear reason for recognizing *Spreo* except convenience. Benson (1959) recorded a male *L. chloropterus elizabeth* (Stresemann) in full breeding condition but with juvenile chestnut on the abdomen from Lochinvar in Zambia, and I have seen such birds in the early part of the breeding season in northern Rhodesia. These observations hardly suggest that we are dealing with a character of generic importance. Durrer & Villiger (1970) show that *Lamprotornis*, *Cosmopsarus* and *Spreo* have the same iridescence structure, and differ substantially therein from other genera of African starlings. By *Spreo* they mean *S. superbus* (Rueppell) and its relatives, not the restricted genus of Clancey (1958).

The similarities in plumage and structure at both macro and micro levels leads me to believe that two genera should be recognized: *Spreo* including *bicolor*, *albicapillus* Blyth and *fischeri* (Reichenow) as proposed by Clancey (1958), and *Lamprotornis* including the species placed therein by White (1962) and Amadon (1962), plus *hildebrandti* (Cabanis), *pulcher* (P. L. S. Mueller), *regius* (Reichenow), *shelleyi* Sharpe, *superbus* and *unicolor* (Shelley), and I propose accordingly.

I am obliged to Dr. da Rosa Pinto for facilities for study at Sa da Bandeira and for permission to discuss this aberrant specimen, to M. P. Stuart Irwin for criticizing a draft of this paper, and to K. Bardowicks for translating the critical parts of Durrer & Villiger (1970).

References:
Amadon, D. 1943. The genera of starlings and their relationships. *Am. Mus. Novit.* 1247: 1–16.
Amadon, D. 1962. Family Sturnidae in *Check-list of birds of the world* XV. Cambridge, Mass.: Museum of Comparative Zoology.
Benson, C. W. 1959. Some additions and corrections to a *Check list of the birds of Northern Rhodesia. Occ. Pap. Nat. Mus. S. Rhod.* 23B: 257–285.
Clancey, P. A. 1958. The generic status of the Superb Starling *Spreo superbus* (Rueppell) and its allies. *Durban Mus. Novit.* V (10): 137–138.
Durrer, H. & Villiger, W. 1970. Schillerfarben der stare. *Journ. f. Orn.* 111: 133–153.
Shelley, G. E. 1906. *The birds of Africa* V (I). London: R. H. Porter.
White, C. M. N. 1962. *A revised check list of African shrikes, orioles, drongos, starlings, etc.* Lusaka: Government Printer.

Notes on some Ethiopian birds

by C. Erard and J. Prévost

Received 27th November, 1970

The following notes form part of the results of the expedition of the Laboratoire d'Ornithologie (Muséum National d'Histoire Naturelle, Paris) to Ethiopia in 1968. We wish to thank I. C. J. Galbraith and D. J. Freeman, who gave Erard every assistance while he was working in the British Museum (Natural History), London; and C. W. Benson, who examined some material with him and assisted in the final drafting of this paper.

Tauraco leucotis (Rüppell)

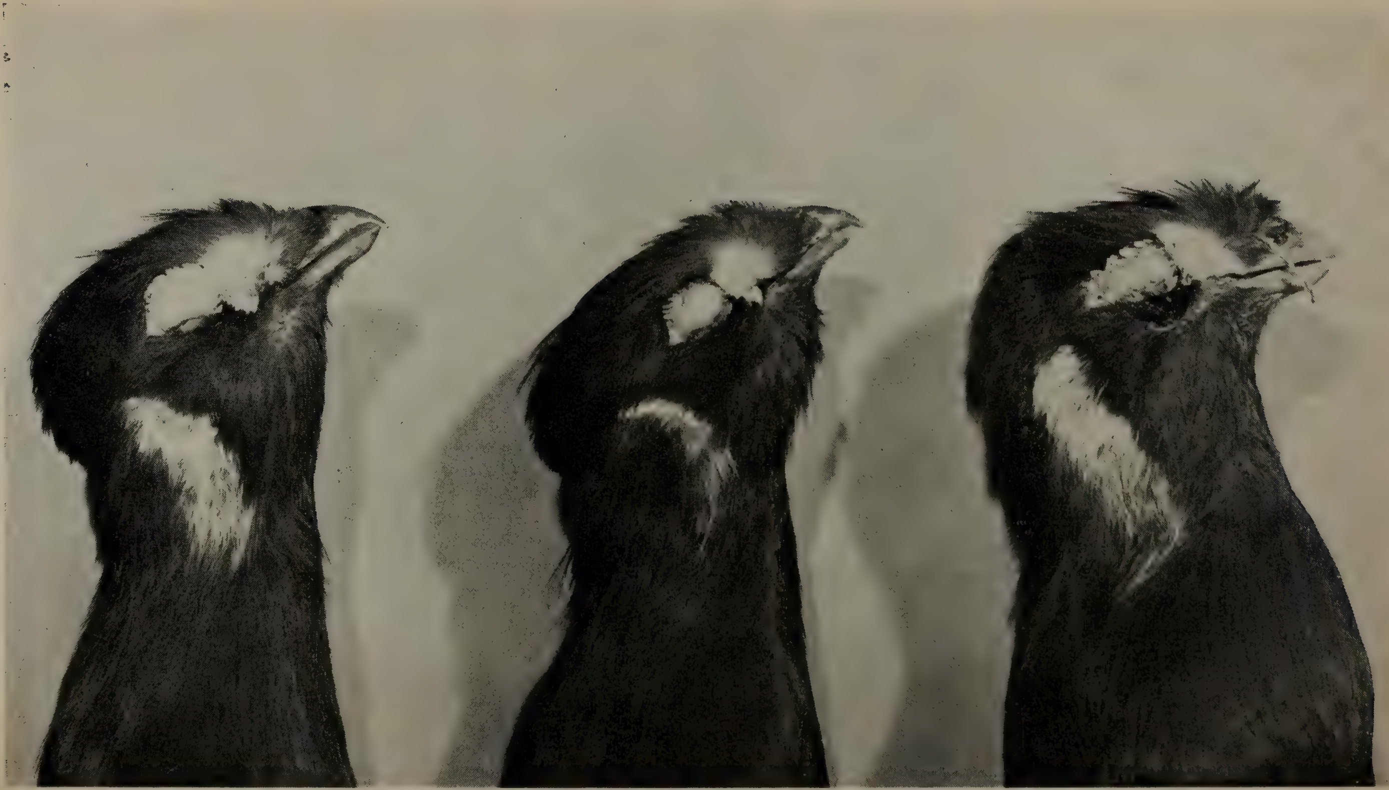
The White-cheeked Turaco is a species endemic to the Ethiopian highlands, although its breeding area extends slightly beyond the political boundaries of Ethiopia into the south-eastern Sudan. Two races are generally recognised: the red-crested *T. l. donaldsoni* (Sharpe) in northern Harrar, Arussi and northern Bale; the black-crested *T. l. leucotis* (Rüppell) from south-western Arussi, Shoa and Sidamo westward to the Boma plateau in the south-eastern Sudan, and northward to Eritrea (now politically part of Ethiopia). Ticho in Arussi is the westernmost locality at present known for *donaldsoni*.

Although Moreau (1958: 108) has published a useful map of the distribution of *leucotis* and *donaldsoni* in eastern Ethiopia, information from the zone of contact between the two subspecies is still poor, with precise data from mountainous Arussi and especially from Bale between the Mendebo-Araenna mountains and Sidamo (headwaters of the Ganale Doria and the Uelmal) lacking.

The fact that in 1968 we found black-crested *leucotis* between Wadera and Zembaba, an apparently previously unknown locality where *T. leucotis* meets *T. ruspolii* (Salvadori) (see Erard & Prévost, 1970), suggests that the area between the Ganale Doria and the Uelmal is inhabited by what is usually called *T. l. leucotis*. We say "usually called" because our material, together with that in London and that which was already in Paris, shows an interesting geographical variation among the populations commonly designated as *T. l. leucotis*, to which attention does not seem to have been previously drawn.

Below is a list of the material by provinces attributable to the nominate race which we have examined. Only those specimens whose localities could be traced on maps are considered. "B.M." or "M.P." after the specimens indicates where they are deposited, respectively either in London or Paris.

Eritrea: 1♀, Anseba Valley, Aug. (B.M.).



Left: *Tauraco l. leucotis* from Agaro in Kaffa, and (centre) from Koffole in Arussi.
Right: *T. l. donaldsoni.*

Begemder-Gojjam: 1♂, 1♀, Gondar, Sept., Nov. (M.P.); 5♂♂, 3♀♀, near Lake Tana, May/July (B.M., M.P.).

Shoa: 1♀, Sciotalit, Nov. (B.M.); 1♂, Daba, Feb. (B.M.); 2♂♂, 2♀♀, Mt. Barka, Managasha Forest, Oct./Nov. (B.M.). (Managasha is apparently the same as Manangasha, at 9° 08′ N., 38° 20′ E., *fide* Benson & Irwin, *Arnoldia, Rhodesia* 19(3), 1967: 18).

Kaffa: 1♂, Jimma, May (B.M.); 2♂♂, Agaro, near Jimma, June (M.P.); 1♀, Guimira, May (B.M.); 1♂, Maji, Aug. (B.M.); 1♂, Kullo, lower Omo, June (B.M.).

Sidamo: 1♀, Lake Margherita (Abaya), May (M.P.); 1♂, 1♀, Wondo, Nov. (B.M.); 2♂♂, Alghe, Oct., Dec. (B.M.); 1♂, 2♀♀, Yavello, Feb., June (B.M.); 1♂, Irba-Moda, Dec. (M.P.); 1♂, 1♀, Wadera-Zembaba, May (M.P.). (These two last localities are respectively at 6° 11′ N., 38° 42′ E. and 5° 40′ N., 39° 20′ E., the preceding four are shown on the map in Moreau, 1958: 108).

Arussi: 1♂, 1♀, Ketchiba, Jan. (B.M.); 4♂♂, 1♀, Koffole, Apr. (M.P.). (Ketchiba has not been traced, but the label is also inscribed Arussi. The specimens were collected by Zaphiro, and from the itinerary in Ogilvie-Grant (1913) apparently somewhere between Lake Zwai and the Cathar River, near the Arussi/Shoa border and the eastern edge of the Rift Valley. Koffole is at 7° 05′ N., 38° 45′ E.)

Sudan: 3♂♂, 1 unsexed, Boma plateau, Feb., Nov; (B.M.).

The material from Eritrea, Begember-Gojjam, Shoa, Kaffa and the Sudan has the mantle and wing-coverts blue in colour, with large conspicuous white patches on the sides of the neck, whereas that from Sidamo and Arussi is correspondingly green rather than blue, with the neck-patches smaller (as shown in the Plate). Nevertheless it should be mentioned that the two specimens from Ketchiba, on the Arussi/Shoa border, are bluer than the others from Arussi and Sidamo, and have larger neck-patches. The greenest birds, with the neck-patches almost obsolete, and so the most differentiated from those from central, northern and western Ethiopia, are from Koffole in Arussi, Irba-Moda and Wadera in Sidamo.

This blue coloration is probably an ancestral character, shared with *T. l. donaldsoni* and *ruspolii*, this latter belonging phylogenetically to the same stock as *leucotis*. This character, more accentuated, is also shown by *T. hartlaubi*, which Moreau (1958: 270) and White (1965: 178) place in the same superspecies as *leucotis* and *ruspolii*, surely correctly. It appears that east of the Rift Valley nominate *leucotis* is becoming brighter, greener, with less white on the sides of the neck. It also is interesting that besides its red crest *donaldsoni* has the mantle and wing-coverts blue (a little more purple than in *leucotis*) and large white neck-patches, as in the birds from west of the Rift (see Plate). There appears to be a character-divergence; *leucotis* becoming more clearly differentiated from *donaldsoni* as the breeding ranges of the two approach one another. Moreau (1958: 259) suggests that the original stock of the common ancestor to *leucotis* and *ruspolii* could have been divided by the dry Rift Valley, the two populations evolving to specific level on the two sides of this ecological barrier: *leucotis* in the west and *ruspolii* in the east. Later, during a wetter era, *leucotis* would have extended eastward across the Rift, forced *ruspolii* southward, and given rise to *donaldsoni*. Still later, *leucotis* would have crossed the Rift again, pushing *ruspolii* still further south into its last stronghold.

It is obvious that for species ecologically dependant on montane forest, the Rift Valley has played an important role from an evolutionary point of view as an isolating barrier. Its importance has been stressed for the francolins by Hall (1963: 135, 151). Benson, Irwin & White (1962) give many instances for birds generally from further south, including in particular differentiation in *Tauraco persa* (Linnaeus) (*sensu lato*) on the two sides of the Limpopo, Zambezi and Shire Valleys (see pp. 163, 169, 180). Moreau's hypothesis seems the most plausible. Lack of precise information on the palaeoclimatology and palaeobotany of Ethiopia makes it impossible to confirm it, however, or to express an alternative. It is possible that, for reasons still not understood, in the course of vicissitudes which affected southern Ethiopia, *T. ruspolii* was isolated and evolved only in Sidamo. A problem of local isolation in that part of Ethiopia also arises for *Zavattariornis stresemanni* and *Hirundo megaensis*. The hypothesis allows one to understand how, by an extension east of the Rift, the divergence between *leucotis* and *donaldsoni* (and *ruspolii*) has been strengthened by morphological differences reinforcing ethological isolating mechanisms. Further field work is necessary for a better understanding of this geographical variation. It is especially important to study the behaviour and ecology of these turacos, as well as their distribution in Arussi and Sidamo. Special attention should be paid to the relationship of *leucotis* and *donaldsoni* in their zone of contact, to ascertain whether *donaldsoni* is merely a *subspecies* of *leucotis*.

Caprimulgus natalensis Smith

On 11th June 1968, ca. 5 km south-east of Agaro on the road to Jimma (Kaffa), at 7° 50′ N., 36° 38′ E., and altitude 1650 m, we collected a young nightjar at night on an earth-road, in a large damp grassy clearing, near some cultivation, and not far from the outskirts of forest. On returning to Paris, we realised that it was a *Caprimulgus natalensis*, a species not previously recorded from Ethiopia (Mackworth-Praed & Grant, 1952; White, 1965). It is a male in juvenile plumage, wing 153 mm, and it weighed 62 g. The outer primaries (2, 3, 4 and 5 in the left wing; 2 and 3 in the right) and the submedian tail-feathers show remains of sheath at the bases.

The nearest known localities to Agaro are in the southern Sudan (Cave & Macdonald, 1955), and in Uganda and north-western Kenya (Jackson & Sclater, 1938). Sudanese skins in the British Museum come from three localities:—Lake No: west of Tonga (Upper White Nile); and the Baro River, on the Sudan-Ethiopia border between Illubabor and Wollega, at ca. 8° 30′ N., 33° 40′ E. The species may be expected to occur on the Ethiopian side of the Baro Valley, thus linking our record up with the Sudanese ones.

Onychognathus albirostris (Rüppell)

Mackworth-Praed & Grant (1955) describe the female of the White-billed Starling as distinguishable from the male by the head, neck and chest being washed with slightly glossy violet; while young are much duller than adults and show some grey on the head and neck. In 1968 we recorded this species commonly in flocks of five to forty birds in Simien near Debarek (ca. 13° 20′ N., 37° 50′ E.) and in the Blue Nile Valley between Dejen and Goha Tsion (ca. 10° 05′ N., 38° 15′ E.). In both places it frequented rocky country with many cliffs. Five birds were collected:—

(a) 10 km north of Debarek, 4th July:—

♀, wing 152 mm, weight 135 g; ovary with follicles less than 1 mm in diameter; outer primaries 1 and 2, and 3rd tail-feather moulting; stomach-contents remains of fruits and of large flying ants.

(b) Blue Nile Valley, 9th July:—

♀, wing 156 mm, weight 130 g; ovary inactive, but oviduct enlarged; stomach-contents fruits.

♀, wing 157 mm, weight 130 g; follicles 1 mm in diameter, oviduct enlarged; stomach-contents fruits and pieces of Hymenoptera.

♂, wing 156 mm, weight 130 g; testes 4 × 3 mm; 2nd outer primary and 1st and 5th left tail-feathers (but only 6th right tail-feather) moulting; stomach-contents fruits and some flying ants.

♂, wing 167 mm, weight 145 g; testes 5 × 3 mm; 2nd outer primary, 3rd tail-feather, wing-coverts and body plumage moulting; stomach-contents some fruits and many remains of Orthoptera and Hymenoptera.

The females can be immediately distinguished by the dark, somewhat bluish and slightly glossy grey colour of the head, this colour extending to the upper back and upper chest. The males show no such contrast, the colour of the head, back and chest being the same. This sexual colour-difference is similar to that in other species of the genus *Onychognathus*. Probably Mackworth-Praed & Grant used mis-sexed specimens for their description. It may be added that the eye in this species is dark red.

References:

Benson, C. W., Irwin, M. P. Stuart & White, C. M. N. 1962. The significance of valleys as avian zoogeographical barriers. *Ann. Cape Prov. Mus.* 2: 155–189.

Cave, F. O. & Macdonald, J. D. 1955. *Birds of the Sudan.* Edinburgh and London: Oliver & Boyd.

Erard, C. & Prévost, J. 1970. New facts on the distribution of *Tauraco ruspolii* (Salvadori). *Bull. Brit. Orn. Cl.* 90: 157.

Hall, B. P. 1963. The Francolins, a study in speciation. *Bull. Brit. Mus.* (*N.H.*), *Zool.* 10: 105–204.

Jackson, F. J. & Sclater, W. L. 1938. *The Birds of Kenya Colony and the Uganda Protectorate,* Vol. 2. London: Gurney & Jackson.

Mackworth-Praed, C. W. & Grant, C. H. B. 1952–55. *Birds of eastern and north-eastern Africa.* Vols. 1 and 2. London: Longmans.

Moreau, R. E. 1958. Some aspects of the Musophagidae. *Ibis* 100: 67–112, 238–270.

Ogilvie-Grant, W. R. 1913. On a collection of birds from southern Abyssinia, presented to the British Museum by Mr. W. N. McMillan. *Ibis* 10(1): 550–641.

White, C. M. N. 1965. *A revised check list of African non-passerine birds.* Lusaka: Government Printer.

[The cost of the plate in the above paper was borne by the Laboratoire d'Ornithologie —Ed.]

Geographical variation and distribution in the swift genus *Schoutedenapus*

by R. K. Brooke

Received 4th December, 1970

Much of the work on which this paper is based was done while holding a Frank M. Chapman memorial grant from the American Museum of Natural History. I am obliged to the curators of museums listed in Brooke (1969a) for facilities for study. I am also obliged to Mr. P. L. Britton for a list of swift specimens in the National Museum of Kenya in Nairobi. As in previous papers delta-length means the distance between the tips of the fourth and fifth rectrices when the tail is held closed.

De Roo (1968) very correctly erected the genus *Schoutedenapus* with type species *myoptilus* (Salvadori) 1888: Let Marefia in Ethiopia, but sidestepped the question of whether to include any other species in it. Having examined the three known specimens of *S. schoutedeni* (Prigogine) 1960: Butokolo in

Congo Kinshasa, all of which are in the Koninklijk Museum voor Midden Afrika in Tervuren, I am convinced that it is a good species and not some sort of phase of *S. m. chapini* (Prigogine) as suggested by Hall & Moreau (1962) and as assumed by White (1965). In this view I am supported by Traylor (*Auk* 1966: 492), Chapin in Prigogine (1960) and Dr. C. Vaurie (among Chapin's notes preserved in the A.M.N.H.). But it is not by an appeal to authority but by a consideration of the material that I am convinced that *S. schoutedeni* is a good species and not a peculiar juvenile of *S. m. chapini* with which it is apparently sympatric. The throat is not pale; there are no pale patches above the bill and before the eyes; it is darker above, particularly on the secondaries; the outermost rectrices are not particularly emarginate—more so than juvenile and much less so than subadult and adult *S. m. chapini*; wing and delta-lengths are shorter. It thus differs from *chapini* of which I have examined 69 specimens. A number of sympatric swifts in *Apus*, *Chaetura*, *Collocalia* and *Cypseloides* differ in a few constant small characters in different parts of the body and are universally accepted as good species. The same position holds in *Schoutedenapus*.

Prigogine (1960) in his original description referred only to the type and one paratype. When I was at Tervuren Dr. A. De Roo kindly pointed out to me another specimen, i.e. the third known, taken by Prigogine at Mubandakila in eastern Congo Kinshasa on 12th November, 1956: it is a male in normal plumage as are the two birds taken at Butokolo (the type locality) on 28th October, 1959. Its wing and delta lengths are 131 and 9 mm respectively whereas those of the Butokolo birds are 123 and 124 and 5 and 5.5 mm. As shown under *S. myoptilus* below the average measurements for adult male *chapini* are 133.1 and 10.98 mm.

Schoutedenapus myoptilus (not *S. myioptilus* as in White [1965]: myoptilus means mouse-feathered and myioptilus means fly-feathered in Greek, an inappropriate emendation which C. M. N. White (*in litt.*) tells me is a printing error) is widely distributed in the mountains of eastern Africa from Ethiopia to Rhodesia with an isolated race on Fernando Po. The nominate race, which is the palest, is not often collected, not because it is truly scarce as its vernacular name suggests but because it is difficult to shoot swifts of any species, and this is accentuated when they frequent precipices as this species does and the shot birds fall half a mile below one's feet. There is material of the nominate race which I have examined unless authority is cited from: *Ethiopia* Let Marefia (White 1965); *Kenya* 15 miles south of Isiolo, Kapenguria, Mt. Kenya, Naivasha (P. L. Britton *in litt.*), Nanyuki; *Uganda* Mt. Moroto; *Tanzania* Kilimanjaro, Ngara Ohattoni southwest of Arusha (Kittenberger 1959), sight records Oldeani (Dillingham 1958); *Malawi* Mt. Mlanje (Benson 1952); *Zambia* sight records nyika (Keith & Vernon 1969); *Rhodesia* Chimanimani Mountains, Mt. Inyangani.

It obviously occurs in Mozambique since Mt. Mlanje and the Chimanimani Mountains straddle its borders with Malawi and Rhodesia. M. P. S. Irwin (pers. comm.) has seen it on the top of Gorongosa Mt. and also at Stapleford in Rhodesia. Breeding sites are only known in Rhodesia (Brooke in press for *Ostrich*).

The range and average wing- and delta-lengths are respectively adult ♂♂ wing-length 129–141 av. (10) 133.6, delta-length 12.0–17.5 av. (10) 14.35; adult ♀♀ wing-length 130–139 av. (7) 134.3, delta-length 13–18 av. (7) 15.50 mm. There appears to be no significant sexual difference in adult measurements, and the overall ranges and averages are adult wing-length 129–141 av.

(17) 133.9, delta-length 12–18 av. (17) 14.82 mm. Three juveniles (two males and an unsexed bird) have wings ranging 128–131 and deltas from 6.5–8.0 mm. The short delta-length is a principal character by which juveniles may be distinguished. The other two are the unemarginate outer rectrices and the pale tips to the three outermost primaries when fresh (Brooke 1969b).

Few weights for this race are available: two adult males weighed 28 and 29.5 g, an adult female (all from Uganda) weighed 30 g and two juvenile males from Kenya weighed 25 and 25.5 g. average (5) 27.60 g.

S. m. achimodzi (Vincent) 1933: Mt. Mlanje in Malawi, which I have not seen, is widely said to be a synonym of nominate *myoptilus*. I have no reason to doubt the prevailing view despite Benson's (1952) caution, since Rhodesian and Kenyan birds are indistinguishable.

S. m. chapini (Prigogine) 1957: Kamituga in Congo Kinshasa, of the mountains of eastern Congo Kinshasa to western Kenya, is darker and has a shorter delta-length. This race seems more willing to feed low over the ground and more specimens have been taken (Prigogine 1966). There is material which I have examined unless an authority is cited from: *Congo Kinshasa:* Butokolo, Byonga, Idjwi (Prigogine 1967), Isopo, Mt. Kabobo, Kakanda, Kama, Kamituga, Kitutu, Kivu, Kokolokelwa, Luiko, Mbezo, Tubangwa; *Uganda:* Mt. Spelce, Stanley Plateau (both in the Ruwenzori Mountains) (both P. L. Britton *in litt.* on material in the National Museum in Nairobi); *Kenya:* Kakamega.

There is an Angolan record of an immature male taken on Mt. Moco on 27th February with wing-length 130 and delta-length 8 mm. Traylor (1960) thought that it was best placed with *chapini*. Upon examination it shows some approach to the darker colour of *S. m. poensis* and shares with it pale sides to the frons. Its measurements fit it for either race. It may represent a fourth race or a series may show that it is inseparable from *poensis*. A similar relation between Fernando Po and Mt. Moco holds in *Apus sladeniae* (Ogilvie-Grant) (Brooke 1970).

The range and average wing and delta-lengths are respectively adult ♂♂ wing-length 129–137 av. (19) 133.1, delta-length 8–13 av. (21) 10.98; adult ♀♀ wing-length 128–140 av. (18) 133.7, delta-length 9.0–12.5 av. (18) 10.36; immature ♂♂ wing-length 128–140 av. (6) 132.7, delta-length 8.0–10.5 av. (5) 9.70; immature ♀♀ wing-length 126–135 av. (9) 131.1, delta-length 9–12 av. (10) 9.75; juvenile ♂♂ wing-length 127–132 av. (5) 129.2, delta-length 4.5–6.5 av. (5) 5.40 mm. Two female juveniles have wings of 133 and 134 and deltas of 6 and 7 mm. It appears that there is no sexual dimorphism in these measurements but that the delta-length in juveniles is significantly shorter than in adult and immature birds. Immature birds have a less emarginate outer rectrix than do adults. At the end of the fourth rectrix the width of the fifth rectrix varies according to age class: in adults it is 1–2 mm, in immatures it is 2.5–3.0 mm and it is 3 mm in juveniles. This is another way of expressing the increasing emargination of the outermost rectrix with age. The overall ranges and averages are wing-length 126–140 av. (69) 130.9, non-juvenile delta-length 8–13 av. (64) 9.86, juvenile delta-length 4.5–7.0 av. (7) 5.71 mm.

An adult female from Kenya weighed 22 g, and this is the only weight known for this race.

S. m. poensis (Alexander) 1903: Fernando Po is the darkest race in general colour but has pale sides to the frons and a delta-length nearly equal to that of the nominate race. The throat is relatively less pale and more ill defined than in the preceding two races. It is known only from Fernando Po and perhaps Mt. Moco in Angola (see above). Omitting the Mt. Moco bird the wing- and delta-lengths can be summarized on the basis discussed under *chapini* as wing-length 126–133 av. (6) 130.2, delta-length 9.0–15.5 av. (5) 12.70 mm. A male juvenile has a delta-length of 6 mm. No weights are known.

References:

Benson, C. W. 1952. Notes from Nyasaland (preliminary to publication of a check-list). *Ostrich* XXIII: 144–159.

Brooke, R. K. 1969a. *Apus berliozi* Ripley, its races and siblings. *Bull. Brit. Orn. Cl.* 89: 11–16.

— 1969b. Age characters in swifts. *Bull. Brit. Orn. Cl.* 89: 78–81.

— 1970. Geographical variation and distribution in *Apus barbatus*, *A. bradfieldi* and *A. niansae* (Aves: Apodidae). *Durban Mus. Novit.* VIII (19): 363–374.

De Roo, A. 1968. Taxonomic notes on swifts, with description of a new genus (Aves: Apodidae). *Rev. Zool. Bot. Afr.* LXXVII (3–4): 412–417.

Dillingham, I. H. 1958. Some field notes on the Scarce Swift *Apus myoptilus*. *Ostrich* XXIX: 131.

Hall, B. P. and Moreau, R. E. 1962. A study of the rare birds of Africa. *Bull. Brit. Mus. Nat. Hist. Zool.* 8(7): 315–378.

Keith, G. S. and Vernon, C. J. 1969. Bird notes from northern and eastern Zambia. *Puku* 5: 131–139.

Kittenberger, K. 1959. My ornithological collecting expeditions in east Africa. *Aquila* LXVI (3–4): 249–274.

Prigogine, A. 1960. Un nouveau martinet du Congo. *Rev. Zool. Bot. Afr.* LXII (1–2): 103–105.

— 1966. Note on Chapin's Swift. *Bull. Brit. Orn. Cl.* 86: 1–5.

— 1967. La faune ornithologique de l'ile Idjwi. *Rev. Zool. Bot. Afr.* LXXV (3–4): 249–274.

Traylor, M. A. 1960. Notes on the birds of Angola, non-passeres. *Publ. Cult. Diam. Ang.* 51: 129–186.

White, C. M. N. 1965. *A revised check list of African non-passerine birds*. Lusaka: Government Printer.

Notes on a further Pintail x Teal Hybrid

by James M. Harrison and Jeffery G. Harrison

Received 2nd December, 1970

By the courtesy of Mr. C. W. Benson we were invited to examine and comment on a hybrid between a Pintail *Anas acuta* Linnaeus and European Green-winged Teal *Anas crecca* Linnaeus. The specimen is in the University Museum of Zoology, Cambridge, and its particulars are: "No.12/Ana/3/a/11. Collection A. & E. Newton. Found in Leadenhall Market by Johnson, April 1862. Stuffed by Leadbeater". It is illustrated herein as Plate I. It was briefly recorded in *Proc. Zool. Soc. Lond.*, 1862: 84, but was not described.

Leadenhall Market is in London, and was well known in the last century as a place for the sale of wildfowl. So it may be reasonably presumed that this specimen was shot in the wild, somewhere in south-eastern England. It is the first of four such hybrids known, from plumage all males. The second was shot in the Nile Delta on 26th January, 1923, and was illustrated in *Nicoll's Birds of Egypt* (Meinertzhagen, 1930, Pl. XX), this plate being here reproduced as Plate 2. The third was shot in Kashmir on 29th December, 1937, and was described and illustrated by ourselves (Harrison & Harrison, 1969). Sage (1960) discusses and illustrates two wild-shot hybrids, from plumage also males. One of these constitutes the fourth record, and was shot in Holland, but with no exact date. The other was between a Pintail and an American Green-winged Teal *A. crecca carolinensis* Gmelin, shot on 17th December, 1952 in Imperial County, California. U.S.A. These two specimens

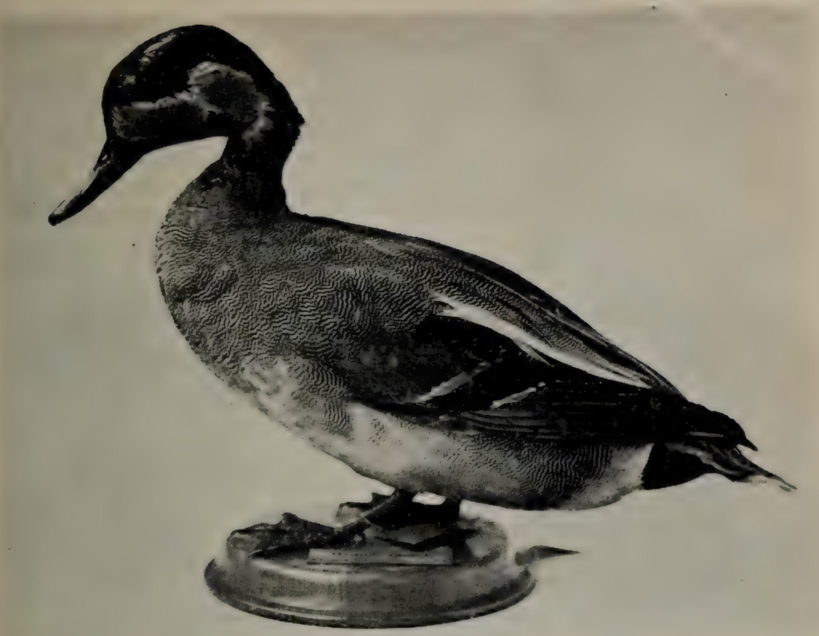


Plate 1. Pintail × Teal, Leadenhall Market, England.

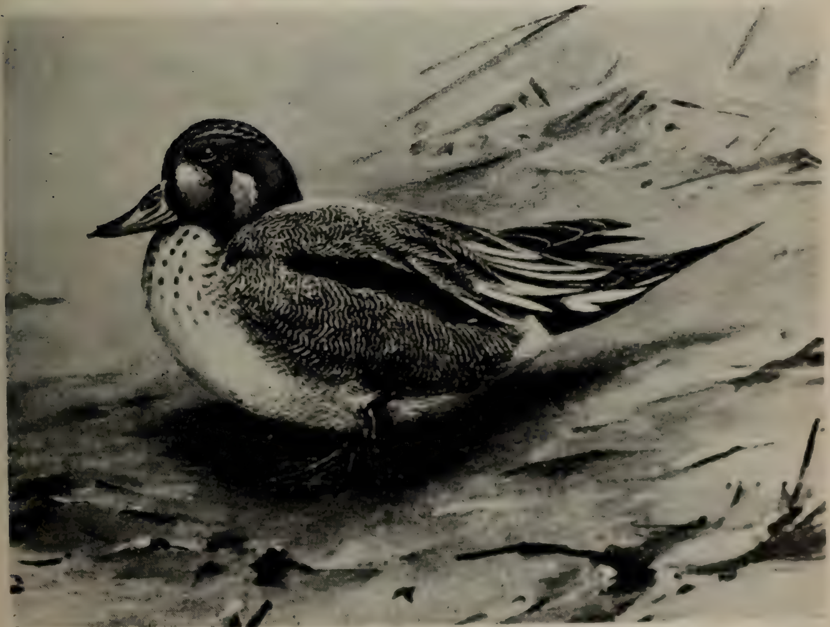


Plate 2. Pintail × Teal, Nile Delta, reproduced from *Nicoll's Birds of Egypt.*

were described as exhibiting "characters common to the males of both parent species". The white crescents on either side of the breast of the American Green-winged Teal are dominant in the hybrid.

The English specimen closely resembles the Kashmir one. A full description is therefore unnecessary, but when these two and the Egyptian one are compared, they show clinal characters, viz. in the bimaculated facial pattern and the length of the tail. In the Egyptian bird the vertical stripe forming the bimaculation is broad and dark; in the English bird, while the bimaculation is well marked, the vertical stripe is white, with only some dark colour at its base, above and below; and in the Kashmir bird the bimaculation is minimal (Harrison & Harrison, 1969). It is of interest that the Egyptian and Kashmir birds were originally thought to be hybrids between Teal and Baikal Teal *Anas formosa* Georgi. The English bird has the shortest tail (83 mm), the Kashmir bird is intermediate (93 mm), while the Nile bird has it as long as in many Pintail (see Plate 2), though unfortunately Meinertzhagen (1930) does not give any figure. The Dutch bird is also intermediate (94 mm), while the American bird has tail-length as much as 135 mm (Sage, 1960).

The breast also shows variation, though not clinal. The Egyptian bird is an almost exact copy of the vertical spotting of some Teal specimens in its discrete regularity and intensity. The Kashmir bird in this region is much more feebly marked, as already commented on, showing a "slight obscured spotting as in many Teal" (Harrison & Harrison, 1969). The English bird is somewhat remarkable in that the breast is rather strongly marked by a mixture of vertical spotting and transverse barring. That it is a bird of the year is apparent from some juvenile feathers still retained on the rump. Measurements in mm of the English specimen are: Wing (chord) 232: bill 45.4 (width at nostrils 13.5, maximum width 16); nail 8 x 3; tarsus 38; tail 83.

DISCUSSION

There are now four records of a cross Pintail × European Green-winged Teal, in which the direction of the parentage is not known. The American specimen was also wild-shot, so that in this case too the direction is unknown. The characters exhibited by these five hybrids show variation which, while not strictly intermediate, is nevertheless clinal, as can be seen from tail-length and facial pattern. In the English specimen Teal characters predominate, whereas in the Egyptian one the characters incline more to Pintail. These two morphological phenotypes may well represent the progeny of the outcome of the two directions of this interspecific cross, as has been shown in the case of Pochard *Aythya ferina* (Linnaeus) and Tufted Duck *A. fuligula* (Linnaeus) hybrids (Gillham, Harrison & Harrison, 1966).

All five known examples of Pintail × Teal crosses show bimaculation of the face, a character also revealed in other inter-specific crosses in the Anatidae, particularly those involving Mallard *Anas platyrhynchos* Linnaeus, Wigeon *A. penelope* Linnaeus and Shoveler *A. clypeata* Linnaeus. These were discussed by one of us (J.M.H., 1945, 1949, 1953, 1954, 1959), and it was suggested that the relatively frequent expression of bimaculation leads to two conclusions:

(1) that this character is of great antiquity;
(2) that the marked resemblance to the Baikal Teal indicates that this species is most probably an archaic form.

Further support for this view is provided by a variant drake Teal obtained on 24th November, 1945 at Marschapel, Lincolnshire, England, in which a bimaculated facial pattern has occurred without any suggestion of hybridisation. The head of this specimen is shown alongside that of the English hybrid for comparison (Plate 3).

As has been shown, there is a cline both in tail-length and in the bimaculation of the face, the extremes in the latter being the Egyptian and English specimens. The English one, in which the vertical stripe is narrow and white rather than thick and dark, is almost exactly comparable to the Lincolnshire variant.

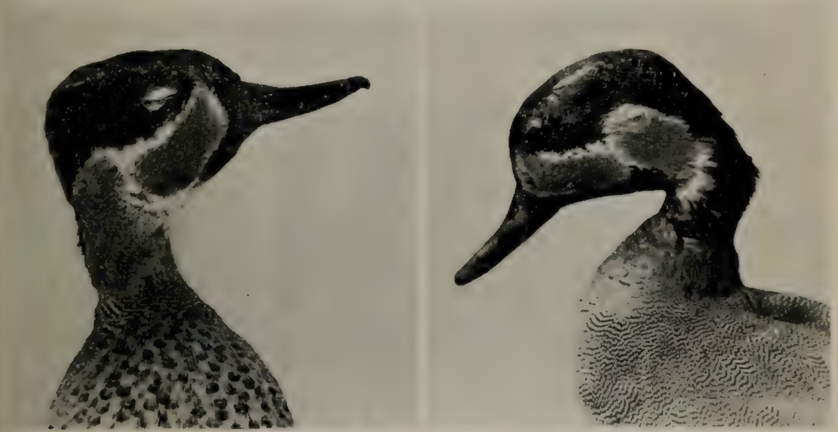


Plate 3. Head of variant Teal, Marschapel, Lincs., England (*left*); Leadenhall hybrid for comparison (*right*).

Much is to be learned from a study of these hybrid and abberant ducks. Since characters closely resembling those of other species can sometimes be recognised in one and the same individual, one can reasonably postulate that the gene pool in the group must carry multiple factors. In the present series, a nuchal tuft is to be seen in the hybrid Pintail × American Green-winged Teal, while white on the front of the neck could be derived from Pintail and/or Falcated Teal *Anas falcata* Georgi, particularly when associated with some downward curving of the long scapulars and the nuchal tuft.

SUMMARY

Five examples of hybridisation between Pintail *Anas acuta* and Teal *A. crecca* are discussed. The aberrant characters these exhibit are specified, and their possible reversionary significance is indicated. It is suggested that by a recombination of genes, characters can be presented which shed much light on the evolution of the Anatidae.

ACKNOWLEDGEMENT

We wish to offer our thanks to Mr. C. W. Benson, of the University Museum of Zoology, Cambridge, for giving us an opportunity of examining an interesting Pintail × Teal hybrid; and to Dr. Pamela Harrison for the Plates 1 and 3.

References:

Gillham, E. H., Harrison, J. M. and Harrison, J. G. 1966. A study of certain *Aythya* hybrids. *Wildfowl Trust 17th Ann. Rep.:* 49–65.

Harrison, J. M. 1945. Exhibition of two varieties of the Teal. *Bull. Brit. Orn. Cl.* 66: 24.
— 1949. Reversionary trends in birds. *Bull. Brit. Orn. Cl.* 89: 37–44.
— 1953. On the significance of variations of pattern in birds. *Bull. Brit. Orn. Cl.* 73: 37–40.
— 1954. Further instances of aberrations of pattern and colour in the Anatidae. *Bull. Brit. Orn. Cl.* 74: 52–53.
— 1959. Comments on a Wigeon × Northern Shoveler hybrid. *Bull. Brit. Orn. Cl.* 79: 142–151.
Harrison, J. M. and Harrison, J. G. 1969. Comments on a wild-shot Pintail × Teal Hybrid. *Bull. Brit. Orn. Cl.* 89: 100–103.
Meinertzhagen, R. 1930. *Nicoll's Birds of Egypt.* Vol. II. London: Hugh Rees.
Sage, B. L. 1960. Notes on some Pintail × Teal hybrids. *Bull. Brit. Orn. Cl.* 80: 80–86.

[The cost of the plates in the above paper was borne by the authors].

Saxicola torquata (Linnaeus) breeding in Senegal

by G. Jarry and F. Larigauderie

Received 27th November, 1970

While looking for water birds on 2nd April 1970 in the inundation zone of the Djouj (Senegal delta), ca. 40 km north-east of St. Louis, at ca. 16° 15′ N., 16° 18′ W., and at sea-level, out attention was drawn to the alarm calls of a male Stonechat on dry *Phragmites* around a pool. This bird had a well marked collar, black throat, breast not chestnut but whitish, and greyer upperparts than birds of the nominate race we are familiar with in Europe. A second bird, a juvenile, was then seen, to which during the next hour the male brought food two or three times. Despite a careful search, we could not find a female or other young. Nevertheless this record leaves no doubt of reproduction in this locality, and is apparently the first proof of breeding of the Stonechat in Senegal.

In West Africa, the nearest known breeding grounds are otherwise in Sierra Leone and Guinea (*S. t. nebularum* Bates) and Mali (*S. t. moptana* Bates). *S. t. nebularum* inhabits altitudes of over 1200 m, and the male has a deep chestnut-red breast (Bates, *Bull. Brit. Orn. Cl.* 51, 1930: 51), but obviously this does not apply to the male which we saw. On the contrary, the male of *moptana* has "much white on the sides of the neck forming a collar nearly complete . . . most of the breast and belly white, leaving the chestnut patch on the upper breast small . . . the chestnut patch of a pale shade" (Bates, *ibid.* 53, 1932: 8). This description agrees with ours. Furthermore, *moptana* is said to live in "alluvial flats, submerged at high water and covered with coarse grass" (Bates, *loc. cit.*). This habitat seems quite similar to the one in Senegal, which is characterized by many pools, abandoned river beds, and slow water coarses, bordered by *Typha*, *Phragmites*, high grass and wild rice; mostly inundated during the rains.

The specimens of *moptana* collected by Bates were all in breeding condition in January. A female was laying on 17th January (Bates, *Ibis*, 1934: 452). In Senegal, judging from our record, incubation may start around mid-February, assuming that the young bird had left the nest 10 or 15 days earlier, and that incubation and fledgling periods are the same as in Europe.

To sum up, from its coloration and habitat, it can be suggested that the Stonechat breeding in Senegal shows affinities with *S. t. moptana* of Mali, some 1200 km to the east. But the possibility cannot be excluded of an unnamed subspecies in Senegal. The problem can only be solved by the collection of specimens.

15 MAR 1971

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Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 91 No. 2 Published: 20th April, 1971

The six hundred and sixty-ninth meeting of the Club was held at the Criterion in Piccadilly, London, W.1 on Tuesday, 16th March, 1971 at 7 p.m.

Chairman: Dr. J. F. Monk; present: 10 members and 4 guests.

The speaker was Mr. G. R. Mountfort who addressed those present on "Wildlife of the Galapagos", and illustrated his address with photographic slides. It is regretted that owing to the postal strike it was not possible to give the usual notice of this meeting.

Taxonomic notes on some lesser known *Apus* swifts

by R. K. Brooke

Received 4th December, 1970

This paper discusses taxonomic and, to some extent, distributional aspects of *Apus alexandri*, *A. unicolor*, *A. bradfieldi*, *A. batesi* and *A. aequatorialis*, and is largely based on work carried out in various museums acknowledged in Brooke (1969a) while holding a Frank M. Chapman memorial grant from the American Museum of Natural History. Subsequently through the courtesy of Dr. A. A. da Rosa Pinto I was able to visit and examine the collection of *A. bradfieldi* of the Instituto de Investigacao Cientifica de Angola in Sa da Bandeira. I am obliged to Mrs. E. H. Stickney for the loan of material of *A. alexandri* in the collection of the Peabody Museum of Natural History of Yale University. As usual delta means the length between the tips of the fourth and fifth rectrices when the tail is held closed.

Apus alexandri

Apus alexandri Hartert 1901: Sao Nicolao in the Cape Verde Islands is a small, dull brown *Apus* with a forked tail and obsolete barring restricted to the Cape Verde Islands. Lack (1956) followed Hartert in placing *alexandri* as a race of whatever *unicolor* (Jardine) 1830: Madeira was conspecific with. I can find no morphological characters to support such a view. The relative length of the outermost primary which has been used to support the alliance is not by itself of great weight in determining relationships in swifts (Lack 1956). Obsolete barring is unlikely to be due to the factors that have produced the same effect in *A. a. apus* (Linnaeus), which it does not otherwise greatly resemble. It is the only known swift to lay an egg which is not plain white: it is white with small reddish brown spots (Alexander 1898). Zoogeographically the Cape Verde Islands where *alexandri* lives have a fauna derived from both palaearctic and ethiopian regions. It does not closely resemble any other *Apus* species, though it shares with most of them the Mallophagan *Dennyus hirundinis* (Linnaeus) (J. A. Ledger *in litt.*), and it is pure guesswork to ally it with any form in the present state of our knowledge. It may well be a primitive *Apus* with a relict distribution or like other island forms it has lost what few distinctive characters it once possessed. It should therefore be treated as a full species as Bannerman & Bannerman (1968) do pending further study.

The small sample of nine specimens examined does not warrant a breakdown into sex classes and, indeed, judging by other swifts studied, would not show sexual dimorphism. There is either no increase in emargination of the outermost rectrix between juvenile and adult plumage or all birds examined are of one age class. Wing-lengths range 131–144 and average (9) 138.8 mm, and delta-lengths range 2–5 and average (8) 3.31 mm. No weights are known.

Apus unicolor

Lack (1956) placed *unicolor* (Jardine) as a race of *A. apus* on morphological and zoogeographic grounds. Vaurie (1965) dissented and restored *unicolor* to specific rank. After I had examined material in several museums Dr. Vaurie courteously discussed this question with me in the American Museum of Natural History and with that great collection to hand for reference. We are agreed that Lack's (1956) account is accurate; that *unicolor* has achieved a high level of distinctness for a race of an *Apus* species, and that the form is derived from *A. apus* stock. I believe that it is the more informative arrangement to place *unicolor* as a third race of *A. apus* (along with *pekinensis* [Swinhoe]) and did so without comment in my recent reclassification of the Apodidae (Brooke 1970b). *A. a. unicolor* is restricted as a breeding form to to the archipelagos of the Azores and the Canaries.

Apus bradfieldi

Apus bradfieldi bradfieldi (Roberts) 1926 has been discussed in Brooke (1969a, 1970a). I have since had the opportunity of studying the material collected in southwest Angola and also of seeing about a thousand of them in the field, mostly at Vila Arriaga but a few at Sa da Bandeira. It is now possible to define the range in Angola; to give more comprehensive measurements than in Brooke (*op. cit.*) and to describe the juvenile plumage. Specimens have been collected in the Huila and Mocamedes districts at Lake Arco, Areia River, Vila Arriaga, Camba Farm, Lake Conoinga, Mouth of the Cunene River, Curoca River, Huila, Leba, Raposeira, Sao Joao do Sul, Techivinguiro, Tundavala.

Angolan birds are shorter winged than South-West African ones. The ranges and averages are: Angola 162–178, av. (34) 169.8; South-West Africa 167–182, av. (30) 174.6 mm. The two weights known from South-West Africa are above the average for Angolan birds (see below).

The range and average wing-, tail fork- and delta-lengths are respectively: adult ♂♂ 162–176, av. (10) 170.1; 21–27, av. (8) 22.6; 3.0–5.5, av. (11) 4.27; adult ♀♀ 163–178, av. (8) 171.9; 20–24, av. (8) 21.5; 1.5–5.0, av. (9) 3.33; juveniles (mostly unsexed) 165–177, av. (16) 169.5; 17–23, av. (13) 20.0; 2–5, av. (13) 3.58 mm. These figures show no age or sex dimorphism in wing-lengths, and this is the justification for taking the overall figures when comparing Angolan and South-West African birds above. There may be dimorphism in tail fork-length but the overall range and average is 17–27, av. (31) 21.1 mm. The apparent dimorphism in average delta-length is probably a product of sampling error or undetected moult since it is not supported by the ranges: the overall range and average is 1.5–5.5, av. (35) 3.66 mm.

Weights of Angolan birds are available: adult ♂♂ 41–46, av. (9) 43.1, adult

♀♀ 33–50, av. (8) 41.3, juvenile ♂♂ 41–47, av. (3) 43.3, juvenile ♀♀ 39–47, av. (6) 42.8 g. The apparent lightness of adult females which is unexpected is probably a sampling error. The overall range and average is 33–50, av. (35) 42.4 g. Two South-West African weights are known: ♂ 53, ♀ 44 g. Both are heavier than the Angolan average. It may be that South-West African birds avarage heavier in view of their longer wings.

A prematurely flown nestling with wing-length 121 mm was collected at Vila Arriaga on 14th October, and the collection also has four fledglings in fresh plumage collected on 6th July, 3rd August and 13th November. They show that *A. b. bradfieldi* has a moderately distinct juvenile plumage: the throat patch is duller and more restricted in size and the general colour is a somewhat deeper and greyer brown than in fresh plumaged adults. In addition the blunt outer rectrix and pale tips to the three outermost primaries are apparent as in most Apodini (Brooke 1969b): the nestling also has the pale feet typical of nestling swifts.

Apus batesi

Apus batesi (Sharpe) 1904: Efulen in Cameroun has a restricted distribution in evergreen forest through its need to find swallows' nests under rocky overhangs in which to breed. *Pace* Lack (1956) it is a true *Apus* since it has a pamprodactyl foot. Despite the similarity in breeding habits and dark colour it does not appear morphologically to be closely related to *A. caffer* (Lichtenstein). The gloss on the wings is dull purplish whereas it is green in *caffer*. There is a tendency to double barring in the throat feathers such as one finds on the breast and abdomen of barred swifts like *A. bradfieldi* (Brooke 1969a). I have not seen this on the throat of any other swift.

It may be that there is no increasing emargination of the outermost rectrix with age but the six specimens I have seen are too small a sample on which to base a statement. Nonetheless, in those I have seen the outermost rectrix is even less emarginate than in the juvenile of *A. caffer*. Wing- and delta-lengths range and average: wing-length 122–127 av. (6) 124.2, delta-length 6–8 av. (5) 7.70 mm. No weights are known.

Apus (*Tachymarptis*) *aequatorialis*

Apus aequatorialis (von Mueller) 1851: Ethiopia, restricted to Adowa by Brooke (1967), occurs sporadically among rocky hills from Sierra Leone to Rhodesia and Mozambique. I have not seen material of *A. a. lowei* (Bannerman) 1920: Rokelle River in Sierra Leone, *A. a. bamendae* Serle 1949: Bamenda in Cameroun and *A. a. furensis* (Lynes) 1920: El Fasher in the Sudan, but I have no reason to doubt that they are valid taxa (see discussion in Lack [1956]). Brooke (1967) proposed *A. a. gelidus*: Shotshe in the Matopos hills of Rhodesia and restricted to that country, but did not then know how to distinguish adults from juveniles (c.f. Brooke 1969b). Wing- and delta-lengths may be broken down respectively as follows:— adult ♂♂ 194–209 av. (7) 202.4, 7–9 av. (6) 7.75, adult ♀♀ 192–202 av. (5) 198.6, 5–8 av. (5) 6.70, juveniles both sexes 190–205 av. (4) 199.0, 3–6 av. (4) 4.75 mm. The shorter wing-length of females is probably due to the small size of the sample but the shorter delta-length of juveniles is probably genuine since it occurs in so many fork-tailed swifts. Nonetheless juveniles may be more readily told by their unemarginate outer rectrices, and when in fresh plumage by the pale tips to the three outermost remiges (Brooke 1969b). The overall mensural position may be stated as wing-length 190–209 av. (16) 200.4, adult delta-length 5–9 av. (11) 7.27, juvenile delta-length 3–6 av. (4) 4.75 mm.

The only weights available are for two adult ♀♀: 85.9 and 87.7 g, which suggest that *gelidus* may be somewhat lighter than nominate *aequatorialis* (see below).

The nominate race is widely but discontinuously distributed from Ethiopia to Mozambique with an isolated population in northwestern Angola which is indistinguishable both in measurements and colour from birds from the eastern side of the continent. It is a remarkably uniform race and I have no hesitation in regarding as synonyms *A. a. alfredi* (Shelley) 1900: Mbara in Zambia, *A. a. schubotzi* Reichenow 1908: Ruwenzori Mountains, *A. a. reichenowi* Neumann 1908: Doinyo Erok in Kenya and *A. a. kittenbergeri* Madarasz 1910: Ngare Dovash in Tanzania despite the fact that I have not seen the types, and topotypical material only of *alfredi*, *schubotzi* and *reichenowi*. The nominate race intergrades with *gelidus* in north eastern Rhodesia (Brooke 1967) but the other acceptable races are all isolates. Wing- and delta-lengths may be broken down respectively as follows:—adult ♂♂ 188–213 av. (45) 203.3, 3.5–9.0 av. (40) 6.56, adult ♀♀ 192–210 av. (26) 202.9, 3–8 av. (25) 5.84, juveniles both sexes 196–209 av. (9) 203.8, 3–6 av. (8) 4.44 mm. There is clearly no sex or age differentiation in wing-length. The sex difference in delta-length in adults is probably not real since the averages in juveniles broken down by sex, albeit based on very small samples, shows the opposite tendency: three ♂♂ average 4.16 and five ♀♀ average 4.60 mm. In no African swift have I found sexual dimorphism in delta-length. The overall mensural position may be stated as wing-length 188–213 av. (87) 203.1, adult delta-length 3–9 av. (70) 6.36, juvenile delta-length 3–6 av. (8) 4.44 mm.

A number of weights are available, mostly from Kenya with one each from Angola, Mozambique and Uganda: adult ♂♂ 84–104 av. (17) 92.32, adult ♀♀ 83–105 av. (9) 95.8, juvenile ♂♂ 86 and 88 g. As usual in swifts females average heavier than males. The overall range and average is 83–104 av. (28) 93.08 g.

The small number of juveniles collected of the nominate race may mean that the Mottled Swift lives longer than do other African swifts.

References:

Alexander, B. 1898. Further notes on the ornithology of the Cape Verde Islands. *Ibis* 7(4): 277–285.

Bannerman, D. A. and Bannerman, W. M. 1968. *History of the birds of the Cape Verde Islands.* Edinburgh: Oliver & Boyd.

Brooke, R. K. 1967. *Apus aequatorialis* (von Mueller) (Aves) in Rhodesia and adjacent areas with description of a new race. *Arnoldia* (*Rhodesia*) 3 (7).

— 1969a. *Apus berliozi* Ripley, its races and siblings. *Bull. Brit. Orn. Cl.* 89: 11–16.

— 1969b. Age characters in swifts. *Bull. Brit. Orn. Cl.* 89: 78–81.

— 1970a. Geographical variation and distribution in *Apus barbatus*, *A. bradfieldi* and *A. niansae* (Aves: Apodidae). *Durban Mus. Novit.* VIII (19): 363–374.

— 1970b. Taxonomic and evolutionary notes on the subfamilies, tribes, genera and subgenera of the swifts (Aves: Apodidae). *Durban Mus. Novit.* IX(2): 13–24.

Lack, D. 1956. The species of Apus. *Ibis* 98: 34–62.

Vaurie, C. 1965. *The birds of the palearctic fauna: Non-Passeriformes.* London: H. F. & G. Witherby.

Flamingo (Phoenicopteridae) remains from the British Upper Eocene

by C. J. O. Harrison

Received 31st December, 1970

Summary

The two Flamingo species known from the Upper Eocene of Britain have been assigned to other families. Two shafts of limb bones originally des-

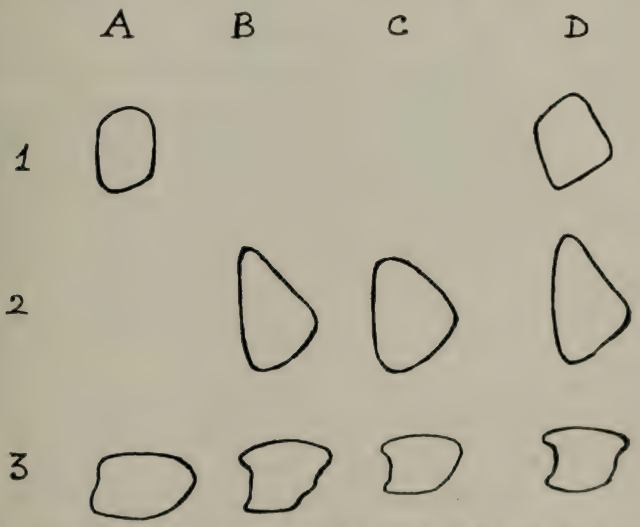
cribed as *Elornis* (?) show characters suggesting that they originate from a flamingo similar to recent species, which may be assigned to the Phoenicopteridae.

Introduction

One of the two flamingos described by Lydekker (1891) from the Upper Eocene of Britain, *Agnopterus hantoniensis*, has been placed in a separate family, the Agnopteridae (Howard 1955). The type humerus of the other, *Elornis anglicus*, is now considered referable to a species of a different suborder (Harrison & Walker, *in prep.*), leaving in the material ascribed to the true flamingos, Phoenicopteridae, at this period only two bone fragments assigned by Lydekker to *Elornis* (?) spp. Both are from Hordle (=Hordwell), Hampshire, and were said to be portions of right tibiotarsi. The first, presented by Sir Richard Owen in 1884 (B. M. reg. no. A 2) is from the proximal part of the shaft of a right tibiotarsus, showing part of one end of the fibular crest. The other, from the Hastings Collection, purchased in 1855 (B. M. reg. nos. 30289 = A 2670) is, in fact, a portion of the shaft of a tarsometatarsus, apparently from a similar bird.

Description

The first specimen is 95 mm long and about 9.0 × 6.2 mm at its thickest point, tapering a little before the fibular crest begins. The shallow proximal end of the tendinal groove is visible on the anterior surface, almost as far as the fibular crest. There is a conspicuous ridge almost along the centre of the posterior surface but a little nearer the internal side; the internal half of the surface curving away to join the more flattened anterior surface at a rather rounded edge, while the external half slopes away to join the anterior surface abruptly, producing a blade-like ridge along the external edge and giving the bone a characteristic transverse section (fig. 2, B). The second specimen is 58.6 mm long and 7.1 × 6.0 mm thick. It is sufficiently uniform to prevent



Transverse sections of limb bones. The anterior side is to the left, the external side is uppermost. 1, most distal part of tibiotarsus; 2, proximal part of tibiotarsus; 3, more distal part of tarsometatarsus.
A, *Palaeolodus gracilipes*. B, un-named specimens. C, *Phoeniconaias minor*. D, *Phoenicopterus ruber*.

definite determination of the side of the bird from which it came. The anterior metatarsal groove is deep and even and occupies most of the anterior width, leaving a small ridge on either side. The outer side of the bone is flattened, showing a conspicuous ridge along the posterior edge; while the inner surface is also flattened but slopes posteriorly, this sloping surface showing shallow paired grooves with a slight ridge between (fig. 3, B).

Discussion

Limb bones of this type, with an angular transverse section, are typical of the recent Phoenicopteridae and absent in other taxa. They are present in *Phoenicopterus* (fig. D) and to a slightly less marked extent in *Phoeniconaias* (Fig. C). In general the fragments suggest bones a little smaller and more slender than those of the Common Flamingo *Phoenicopterus ruber*, and a little larger than those of the Lesser Flamingo *Phoeniconaias minor*. In addition to comparison with these species it is necessary to consider them in relation to the other phoenicopterine genera of the tertiary period.

Elornis is a genus of flamingo-like birds of the Oligocene. The type species, *E. littoralis*, differs from *Phoenicopterus* in many details. The humerus is short and stout, and while the data on other limb bones are inadequate the various incomplete parts indicate similar thicker structures. This does not, therefore, seem a suitable taxonomic unit with which to link the present species.

Palaeolodus is another flamingo genus of the Tertiary, with species described from the Oligocene and Miocene. The material examined lacks proximal parts of tibiotarsi but distal parts of shafts are present. The two Eocene limb fragments under examination show similar ridges to those on recent Pheonicopteridae and on the latter the distal part of the tibiotarsus is almost square in transverse section (fig. 1, D). On *Palaeolodus* this is much more rounded with some anterior/posterior flattening (fig. 1, A). Similarly the tarsometatarsi of *Palaeolodus* species shows a less angular section with a more shallow central groove (fig. 3, A) and in neither case would there seem to be good reason to associate the fossil fragments with this genus. Howard (1955) recognises the Palaeolodidae, like the Agnopteridae, as a separate family within the larger phoenicopterine assemblage.

Agnopterus hantoniensis Lydekker, 1891 also occurs in the Upper Eocene of Hampshire. The type specimen is a right coracoid. Comparison with other osteological material confirms that it is a flamingo. It is one-third to one-quarter larger than the corresponding bones of the largest recent *Phoenicopterus* species, and considerable thicker and more massive. It is likely that the bird was larger than *P. ruber* and more heavily-built. Milne-Edwards's illustrations (1867–68) of the type distal end of the tibiotarsus of *A. laurillardi* shows a heavier bone with a more smoothly rounded shaft lacking the distinctive ridges. It therefore seems preferable not to link the two fragments with this genus.

The remaining genus recognised from the Tertiary is one comprising most of the recent species; *Phoenicopterus croiseti* having been described from the Lower Miocene. The tibiotarsal fragment under examination differs from similar bones of both *Phoenicopterus* and *Phoeniconaias* in that the fibular crest is proportionally much higher, and the line of the tendinal groove is indicated as far as the fibular crest, not slanting up markedly towards the distal commencement of the crest. The fragment of tarsometatarsus is cut away more abruptly on the posterior surface, where two shallow grooves are present, than are those of the above two genera.

Conclusions

These two fragments appear unrelated to the earlier named genera of flamingos or flamingo-like birds. They appear very similar to the two recent genera of flamingos but show differences sufficient to suggest that they should not be put into these genera. The degree of specialisation of the two shafts suggests that flamingos showing a degree of specialisation (at least insofar as limb bones are concerned) comparable with that of recent flamingos might have existed in the Upper Eocene period. In deference to requests from other palaeontologists that shafts of limb bones without ends should not be designated as types I have not named these specimens.

Acknowledgements

I am grateful to my colleague in Palaeontology, C. A. Walker, for help with this note; and to F. Howie for the preparation of casts of the sections of shafts.

References:
Harrison, C. J. O. & Walker, C. A. *In prep.* Birds of the Middle and Upper Eocene of Britain.
Howard, H. 1955. A new wading bird from the Eocene of Patagonia. *Amer. Mus. Novit.* 1710.
Lydekker, R. 1891. *Catalogue of fossil birds in the British Museum* (*Natural History*). London.
Milne-Edwards, A. 1867–68. *Oiseaux fossiles de la France.* Text, 1; Atlas, 1. Masson: Paris.

The occurrence of *Calidris alpina sakhalina* (Vieillot) in Britain

by James M. Harrison & Jeffery G. Harrison

Received 5th January, 1971

On 26th September 1970 an exceptionally large and long-billed juvenile Dunlin was recognised and collected on the Medway Estuary, Kent. In the hand it was seen to have not only a very long bill, but one that was unusually thick at the base; the bird was anatomically sexed as a female.

We have had considerable difficulties in building up completely full measurement data for the various races of the Dunlin. We find that Vaurie (1965), for instance, gives only the measurements of males, despite the great importance of sexual dimorphism in waders. Dement'ev *et al.* (1969) give only wing measurements for comparison, despite the importance of bill length in differentiation of Dunlin races. The race *C. a. sakhalina* breeds in North America and extreme eastern Asia, and intergrades with *C. a. alpina* as *C. a. centralis* Buturlin, a form recognised by Russian authorities (Dement'ev *et al.*, 1969: 145), breeding on Siberian tundras on the Rivers Yenisei and Colyma. *C. a. alpina* breeds in northern Scandinavia, Spitzbergen and northern U.S.S.R. as far as the Gyda peninsula. Vaurie, however, regards *centralis* as on a cline between the nominate race and *C. a. sakhalina.*

The form *sakhalina* is the largest of the Dunlin races, and the specimen from the Medway Estuary falls well within the measurements of this race as shown in the following table of measurements in mm of females based on specimens in the J. M. Harrison Collection and data from Hartert (1912–21) and Witherby *et al.* (1941):—

	C. a. sakhalina		Medway	*C. c. alpina*	
	Canada, Japan, Korea. (11 specimens, Coll. J.M.H.)	Witherby *et al.*	specimen	Witherby *et al.*	Hartert
Wing	115–130	118–128	124	116–119	110–117
Bill from feather margin	36–40	35–41	37.5	31–34.5	28–35
Bill from nostril	30–34		32.0		
Bill depth	6–8.5		8.0		

Ticehurst (1914) has given measurements of five other Dunlin which fall within the range of *Sakhalina.* These are as follows:

			Wing	Bill
♀	23 Sept. 1905	Fair Isle	117	41
♂	23 Sept. 1905	Fair Isle	119	35
♀	17 Jan. 1912	Lowestoft, Suffolk	122.5	37
♀	9 Oct. 1912	Orford, Suffolk	120	37
♀	10 Oct. 1912	Orford, Suffolk	119	36.5

A further example was examined by Hazelwood & Gorton (1955). It was a female found dead on 3rd December 1954 at Redcar, Yorkshire. The wing measured 120 mm and the bill 37 mm. There is another specimen (J. M. H. Coll'n) from the Arnold McMillan Collection, a female obtained on 7th October 1934 in Norfolk. The measurements are as follows:—wing 122 mm; bill from feather margin 37 mm, from nostril 30 mm, and depth 8 mm. These measurements make it also *C. a. sakhalina.*

The autumn of 1970 was notable for the number of American species found in Britain as a result of prevalent westerly gales in which wading birds predominated, and it should be noted that a Lesser Yellowlegs *Tringa flavipes* (Gmelin) was seen on the same Medway marsh on which the Dunlin was obtained. The probability is that these examples of *sakhalina* originated in North America rather than in eastern Siberia, and it is significant that six out of the eight examples listed fall within the period 23rd September to 10th October, at a time when the prevalent wind direction favours transatlantic drift migration.

Summary: This paper describes a recent example of *Calidris alpina sakhalina* from the Medway Estuary in Kent, and lists seven other British examples, which on measurement must be referable to this race of the Dunlin. It is our opinion that these examples are more likely to have originated in North America than in extreme eastern Asia.

Acknowledgements: The specimen referred to from the Medway Estuary was collected under a research permit issued through the Nature Conservancy. Our grateful thanks are hereby expressed to Messrs. W. and H. Mouland for granting us collecting facilities on their land.

References:

Dement'ev, G. *et al.* 1969. *Birds of the Soviet Union.* III. Jerusalem: Israel Program for Sci. Translations.

Hartert, E. 1912–21. *Die Vogel der paläarktischen fauna.* II: 1575. Berlin: R. Friedländer.

Hazelwood, A & Gorton, E. 1955. On a probable *Tringa alpina sakhalina* (Vieillot) in England. *Bull. Brit. Orn. Cl.* 75: 95–96.

Ticehurst, C. B. 1914. Remarks on the different races of the Dunlin. *Bull. Brit. Orn. Cl.* 33: 98–101.

Vaurie, C. 1965. *The birds of the palearctic fauna. Non-passeriformes:* 399–402. London: H. F. & G. Witherby.

Witherby, H. F. *et al.* 1941. *The Handbook of British Birds.* 4: 239–240. London: H. F. & G. Witherby.

Further notes on the north-eastern Greenland race of the Dunlin from Eire and Kent

by James M. Harrison & Jeffery G. Harrison

Received 5th January, 1971

In 1967 we recorded 15 examples of Schiøler's Dunlin *Calidris alpina arctica* Schiøler, the very distinctive small billed race which breeds in north-east Greenland, the first to be recorded for the British Isles (Harrison & Harrison, 1967). All were from south east-England, apparently as passage migrants on dates between 14th May and 7th June, and 7th July and 17th September. Subsequent to this note, the first specimen of this race has been identified from Eire, an example in the National Museum, Dublin, obtained on North Bull Island on 18th May 1893 (*Irish Bird Report*, 1969: 38).

The winter quarters of this race are still undefined, so it is of considerable interest to record a second Irish example, a female, found dead under telegraph wires on 8th March 1970, beside the Swords Estuary, Co. Dublin, and sent to us by Major R. F. Rutledge. The bill measurements of the specimen fall well within those of *C. a. arctica*, as follows:—from feather margin 28.5 mm, and from anterior edge of nostril 25 mm. The bird is in winter plumage with some early development of the dark shaft centres of spring on the upper mantle and breast.

Although this is so far the only recognised example in winter plumage, further examples will be needed to disclose any plumage difference with other races, such as are easily demonstrated in the breeding and juvenile plumages in this form. The present specimen may either have been a wintering bird or possibly one on early spring passage.

We can record two further specimens from Kent. The first, a female, was obtained on 21st August 1970, and the second, a male, on 4th September 1970, both on the Medway Estuary. Their respective bill measurements from the nostril were:—♀ 23 mm, ♂ 21.5.

Acknowledgements: We are most grateful to Major R. F. Rutledge for giving us the specimen from the Swords Estuary, and to Mr. W. Mouland, on whose land the other two specimens were collected. These latter two were obtained under a research permit issued through the Nature Conservancy.

References:

Harrison, J. M. & Harrison, J. G. 1967. The occurence of Schioler's Dunlin in south-eastern England; a race new to the British Isles. *Bull. Brit. Orn. Cl.* 87: 142–148.

Rutledge, R. F. (Ed.). 1969. *Irish Bird Report.*

Postscript: Another Eire specimen of *C. alpina arctica* was reported by one of us, J. G. H., in *Bull. Brit. Orn. Cl.*, 1969: 104–105—an immature female from Derrymore, Co. Kerry 4th October, 1968.

Migration in the Dahlac Archipelago and the neighbouring mainland of Ethiopia, autumn 1962

by Clive F. Mann

Received 15th January, 1971

Introduction

From 14th August to 17th September 1962, C. S. Clapham, A. B. Hawley, R. Stjernstedt and the author, whose combined notes are used in this account, were in the Ethiopian province of Eritrea for the purpose of studying the breeding birds of the Dahlac Archipelago in the Red Sea. Our findings, together with a sketch map of the area, have been summarized by Clapham (1964). The Archipelago has rarely been visited by ornithologists, and not during the summer since 1857 (Heuglin 1859), and although there is recent information on the breeding birds (Clapham 1964 and Urban & Boswell 1969) very little is known about migration.

Whilst working on our main project, we also witnessed the beginnings of the autumn migration of palaearctic species, data on which are given here, together with some records from the adjacent mainland. Some of our records were earlier than the first autumn dates given by Smith (1957), but he has informed me (*in litt.*) that he had very few coastal data for August and September to draw upon for some species.

Details of the topography of the islands will be found in Clapham (1964); of the climate in Smith (1955); of the status of the species mentioned in Smith (1957).

The weather during our stay was fairly constant. On the Archipelago the shade temperature varied little from 100 degrees F. (but considerably higher on the mainland). The winds were predominantly from the east up to the end of August, when they changed to northerly. Although there was plenty of cloud, the sky was rarely completely overcast, and one short shower at the beginning of September was the only rain. The humidity was usually around 80–90% (100% on the mainland) during August, dropping to 50–60% during September.

Systematic List

Ardea cinerea, Grey Heron: First seen at Massawa (one) on 12th September and small parties on 13th–17th.

Ardea purpurea, Purple Heron: One at Massawa on 13th September and a few on 14th–17th.

Ardeola ralloides, Squacco Heron: One flying south on the Archipelago, 23rd August; one flying over Massawa on 15th September.

Plegadis falcinellus, Glossy Ibis: Zula: one, 19th August; Massawa: one, 4th September; Archipelago: two, 23rd August.

Anas querquedula, Garganey: Ten at Zula on 19th August; one flying north on Archipelago, 21st August; small party resting on the sea, 22nd August.

Pernis apivorus, Honey Buzzard: On the Archipelago on 28th August, close views were obtained of one perched in mangroves, and later in flight, giving ample opportunity to observe all salient identification features, such as the shape and proportions and the pattern of barring on the tail. The first record for Eritrea.

Coturnix coturnix, Quail: Seen regularly at Massawa from 26th August to 18th September. Usually single birds, and frequently seen coming in off the sea early in the morning. Up to three recorded daily on the Archipelago during the first week of September.

Porzana porzana, Spotted Crake: One found freshly dead at Massawa on 15th September.

Charadrius hiaticula, Ringed Plover: Small flocks were present on the Archipelago and at Massawa from 17th August to 18th September.

Charadrius mongolus, Mongolian Sand Plover: One in full breeding plumage, amongst a flock of Great Sand Plovers *C. leschenaultii*, on the Archipelago on

28th August. This species had not previously been recorded in Eritrea north of Assab (Smith 1957).

Pluvialis squatarola, Grey Plover: Small flocks at Massawa and on the Archipelago from late August to mid September.

Haematopus ostralegus, Oystercatcher: Up to 17 recorded daily, between late August and mid September, on the Archipelago and at Massawa.

Scolopacidae: The following species were present throughout:—

Curlew Sandpiper *Calidris ferruginea*, up to 300; Little Stint *C. minuta*, up to 40; Sanderling *C. alba*, up to 10; Turnstone *Arenaria interpres*, up to 68; Terek Sandpiper *Tringa terek*, max. 40; Common Sandpiper *T. hypoleucos*, numerous and ubiquitous; Wood Sandpiper *T. glareola*, small numbers; Redshank *T. totanus*, small numbers; Greenshank *T. nebularia*, small numbers; Curlew *Numenius arquata* and Whimbrel *N. phaeopus*, numerous and ubiquitous. The following were also recorded:—Dunlin *Calidris alpina*, three at sea amongst the islands, 3rd September; Ruff *Philomachus pugnax*, one on the Archipelago during early September; Green Sandpiper *T. ochropus*, three, 22nd August and one, 1st September, on the Archipelago; Spotted Redshank *T. erythropus*, one at Zula, 19th August (Smith 1957 gives only four previous records for Eritrea); Bar-tailed Godwit *Limosa limosa*, ca. 30, 22nd August and ca. 40, 1st September, on the Archipelago.

Glareola pratincola, Pratincole: One at Zula, 19th August; one on the Archipelago, 22nd August.

Stercorarius skua, Great Skua: One, identified by its massive size, rounded tail, dark brown plumage with very conspicuous patches on the primaries, was seen pursuing a Red-billed Tropic Bird *Phaethon aethereus* off Massawa on 21st August. Although the Great Skua is known to occur in the eastern Mediterranean (Peterson *et al.* 1966 and Mörzer Bruyns & Voous 1965) and off the southern Arabian coast (Bailey 1966), there are only two previous records for the Red Sea (Mörzer Bruyns & Voous 1965). The latter authors consider all Red Sea and Indian Ocean birds to belong to southern populations.

Larus fuscus, Lesser Black-backed Gull and *L. ridibundus*, Black-headed Gull: Both common on the coast, becoming more numerous during September.

Streptopelia turtur, Turtle Dove: First recorded (one) on 17th August. Recorded on many days subsequently up to mid September, usually in parties of between five and 15. All records refer to Massawa.

Cuculus canorus, Cuckoo: One or two birds were noted almost daily during our stay on the Archipelago, sometimes in an exhausted state, having presumably crossed the Red Sea.

Apus apus, Swift: Present on the Archipelago and mainland throughout, becoming more numerous as time passed.

Coracias garrulus, Roller: A few were present on the Archipelago from 25th August to 6th September.

Merops apiaster, Bee-eater: Massawa:—First recorded on 25th August and small parties were present continually from that date. The Archipelago:—Singles and small parties were seen, often coming to land at dusk (the direction from which they came could not be ascertained) and resting-up the next day, from 30th August to 6th September. Feathers and small pieces of corpses were frequently found at the plucking places of the nesting Sooty Falcons *Falco concolor*.

Merops superciliosus, Blue-cheeked Bee-eater: Present on the Archipelago and at Massawa from 20th August onwards. The following is a list of observations, including, in brackets, those thought to be of this species, but not definitely identified, made on the Archipelago:—

(Small flock flying west of south-west at dawn, 23rd August).

Ten flying west at dawn; eight immatures resting on bushes during the day, 24th August.

(42 circling 15 minutes before sunset; 28 flying west 15 minutes after sunset, 30th August).

Two resting on rocks 30 minutes after sunrise, 31st August.

(Six circling 15 minutes after sunset, 31st August).

Four resting in mangroves by day, and an immature taken by an *F. concolor*, 1st September.

(Steady passage for first three hours of night, bearing 230 degrees, 1st September).

Two resting in bushes during morning, and ca. 35 circling at sunset, 2nd September.

Ca. 20 rose from bushes and departed, bearing 260 degrees, 15 minutes after sunrise; 10 resting during day, 3rd September.

One resting by day, 6th September.

Remains of this species were frequently found at the plucking places of *F. concolor*.

Upupa epops, Hoopoe: Common on the Archipelago, in singles and small parties, throughout our stay. Another frequent prey of *F. concolor*.

Jynx torquilla, Wryneck: One or two on the Archipelago, 5th–7th September.

Motacilla alba, White Wagtail: A few *M. a. alba* on the Archipelago during the first week of September.

Motacilla cinerea, Grey Wagtail and *M. flava*, Yellow Wagtail: Small numbers present on the Archipelago throughout our stay. Both species were found on sandy beaches and exposed coral, and *M. flava* was preyed upon by *F. concolor*.

Muscicapa striata, Spotted Flycatcher: A few present on the Archipelago and mainland throughout our stay.

Oenanthe oenanthe, Wheatear and *O. isabellina*, Isabelline Wheatear: A few of both species present on the Archipelago from 1st September onwards.

Oenanthe deserti, Desert Wheatear: A few present on the Archipelago from 23rd August onwards.

Oenanthe hispanica, Black-eared Wheatear: Two on 1st September and one on 6th September, on the Archipelago.

Oenanthe pleschanka (=*O. leucomela*), Pied Wheatear: One on the Archipelago, 6th September.

(Remains of unidentified *Oenanthe* spp. were frequently found at plucking places of *F. concolor*).

Saxicola torquata, Stonechat: Two on the Archipelago, 29th August, one on 30th and 31st August. One at Massawa, 1st September.

Saxicola rubetra, Whinchat: A few present on the mainland and the Archipelago during the first half of September.

Phoenicurus phoenicurus, Redstart: A few on the Archipelago during the first week of September. Smith (1957) gives no previous records for Dankalia or the Archipelago.

Phoenicurus ochruros, Black Redstart: Ones and twos present on the Archipelago during the last week of August and first week of September. Smith (1957) gives only one previous record for Eritrea, in February 1907.

Luscinia megarhynchos, Nightingale: One trapped at Embatcalla, east of Asmara, 11th September; the first record for Eritrea. (A *Luscinia* sp. seen on the Archipelago on 6th September was thought to be this species).

Sylvia curruca, Lesser Whitethroat: One of a few seen round Bizen and Embatcalla on 12th September was trapped, and proved by wing-formula to be the first Eritrean record of *S. c. blythi*.

Sylvia communis, Whitethroat: Small numbers present on the Archipelago and mainland from 18th August onwards.

Phylloscopus trochilus, Willow Warbler: Unidentified *Phylloscopus* were seen throughout on the Archipelago, but one of this species was seen to be taken by an *F. concolor* on 29th August and its remains were later examined.

Hirundo rustica, Swallow: Present throughout, becoming more numerous as time passed.

Hirundo daurica, Red-rumped Swallow: A few on the Archipelago during first two weeks of September.

Riparia riparia, Sand Martin: Small numbers present throughout. Occasional prey of *F. concolor*.

Delichon urbica, House Martin: A few on the Archipelago during early September.

Lanius collurio, Red-backed Shrike: *L. c. collurio* was present in many parts of Eritrea during last week of August and first week of September. Up to five birds were seen together on the Archipelago, sometimes quite exhausted, having presumably crossed the Red Sea. A few *L. c. isabellinus* or *phoenicuroides* were present on the Archipelago from 1st to 7th September.

Lanius minor, Lesser Grey Shrike and *L. senator*, Woodchat Shrike: Seen in ones and twos on the mainland and the Archipelago during the first week of September.

Oriolus oriolus, Golden Oriole: Although only one was seen on the Archipelago, on 28th and 29th August, feathers were frequently seen at the plucking places of *F. concolor*.

Summary and Conclusions

From the above data, it seems that we were witnessing only the beginning of autumn migration in the area. The exhausted state of some of the birds, and the probable area of origin of others suggest that many of the birds had crossed the Red Sea. Our observations on *Merops superciliosus* tie-in with the evidence cited by Moreau (1961) for a predominantly north-east/south-west movement of migrants during autumn. Obviously the islands provide no more than a place to rest for the migrant Coraciiformes and Passeriformes, since at that time they were almost completely devoid of insects and fresh water. However, the migrants seem to provide almost the entire food supply of the nesting *Falco concolor*. Since there were sometimes as many as a hundred pairs of *F. concolor* on a single island, and those whose nests we found contained between two and four eggs or nestlings, a considerable number of Coraciiformes and Passeriformes must meet their end annually on these islands.

Acknowledgement

I would like to thank K. D. Smith for reading and constructively criticising earlier drafts of this paper. His help was invaluable.

References:
Bailey, R. 1966. The sea birds of the southeast coast of Arabia. *Ibis* 108: 224–264.
Clapham, C. S. 1964. The birds of the Dahlac Archipelago. *Ibis* 106: 376–388.
Heuglin, T. von. 1859. List of birds observed and collected during a voyage in the Red Sea. *Ibis* (1)1: 337–352.
Moreau, R. E. 1961. Problems of Mediterranean-Saharan migration. *Ibis* 103a: 373–427, 580–623.
Mörzer Bruyns, W. F. J. & Voous, K. H. 1965. Notes on sea-birds. 9. Great Skuas (*Stercorarius skua*) in Northern Indian Ocean. *Ardea* 53: 80–81.
Peterson, R., Mountfort, G & Hollom, P. A. D. 1966. *A Field Guide to the Birds of Britain & Europe*. London: Collins.
Smith, K. D. 1955. The winter breeding season of land-birds in eastern Eritrea. *Ibis* 97: 480–507.
— 1957. An annotated check-list of the birds of Eritrea. *Ibis* 99: 1–26, 307–337.
Urban, E. K. & Boswell, J. 1969. Bird observations from the Dahlak Archipelago, Ethiopia. *Bull. Brit. Orn. Cl.* 89: 121–129.

Avian scavengers in Luanda Harbour

by R. K. Brooke

Received 18th January, 1971

Erard & Etchécopar (*Bull. Brit. Orn. Cl.*, 1970: 159) note that gulls are chiefly seen in Luanda harbour from December to June, but saw five on 5th October 1969. On 8th August 1970, a calm, cloudy afternoon, there was only one gull to be seen in the harbour and that was too far away for specific identification. The consequence of the absence of gulls was that the scavenging in the fishing harbour was undertaken by many Grey Herons *Ardea cinerea* and twice as many Little Egrets *Egretta garzetta* working individually. Their technique was to fly slowly at about 10 m above the water and when they saw a manageable item to hover with dangling legs, arched neck and bill pointing straight down. They would slowly lose height until they were able to pick up the item when they would rise clumsily and swallow it. Little Egrets would sometimes come down to an item which was too big to manage but having ascertained this would waste no further time on it. Inbetweenwhiles some birds would perch on ships or buoys, but their principal resting place was the ridge of the roof of the nearby Banco de Angola, whose red tiles were largely whitened with their droppings. The regular absence of gulls permitted the inefficient herons to make an easy living by scavenging fish and offal in the fishing harbour. Lowe (*The Heron*, 1954: 60) gives two records of single Grey Herons scavenging floating fish, and a few records of hovering, but not in connection with scavenging. Worth (*Bokmakierie* 12 (2), 1961: 32) noted the two species of heron scavenging in the harbour in June 1960, together with Grey-headed Gulls *Larus cirrocephalus*. It appears that it is only the seasonal absence of gulls that is necessary to permit the Grey Heron and the Little Egret to learn to scavenge.

Some undescribed nests and eggs of New Guinea Birds

by C. B. Frith

Received 3rd February, 1971

Whilst looking at some nests and eggs in the British Museum collections at Tring, Hertfordshire, a number of undescribed nests from New Guinea came to my notice. Upon further investigation in the British Museum collections in London, a number of egg clutches were found to have been collected with some of the nests in Tring.

The nests and eggs of the following species are described here, as Rand & Gilliard (1967) make no mention of them, except *Ifrita*. Except for *Eupetes castanotus*, no parent birds were collected with these specimens and the identification, to species, is from original labels only. Identification to subspecies is by the given locality save *Eupetes*, which is identifiable from the head of the parent bird, and *Pachycephala*, which was named as such by the collector.

The names and order used are those of Rand & Gilliard (*op. cit.*).

Eupetes castanotus par, Mid-mountain Eupetes (Timaliidae)

Sattleburg, Huon Peninsula, S.E. New Guinea. No date or collector's name is given. The head of a parent bird was collected with this nest and egg, and bears the same registration number as the nest.

Although the nest (reg. no. N193.392) is in very poor condition, it was apparently a fairly shallow open cup, composed almost entirely of old leaves and leaf skeletons. All of these leaves are of a broad oval type, the largest of which measures 125 × 52 mm. There are a few small twiglets and leaf stems in the main structure and a sparse, thin, lining of very fine tendril-like rootlets.

The lack of self-support in this structure suggests that, like *Eupetes leucostictus*, this bird nests on the ground, possibly at the base of a tree. I can give no general measurements for this nest due to its deterioration. Egg 28.3 × 21.9 mm (Cl. no. 1941.9.4.1780), glossy, unlike that of *E. leucostictus*, being very light pinkish buff with a broad zone of darker russet and grey spots and blotches around the larger end. The russet and grey markings cover the rest of the egg but are less dense and sparser towards the small end.

An additional two clutches labelled as being of this species are preserved in the British Museum collection. The first of these consists of two eggs (Cl. no. 1926.1.26.1–2.) collected by W. Goodfellow at Deva Deva, Wharton Range, near Mafula, S.E. New Guinea, c. 5,000 feet, on 22nd June 1925, and is of the race *E. c. pulcher*. The eggs measure 29.1 × 22.4 and 29.4 × 22.6 mm, and are similar to the one of *E. c. par*, but are slightly darker in ground colour, and the markings are regular, not concentrated about the larger end. The grey markings are also inclined to be elongated in this clutch.

The last clutch consists of a single egg (Cl. no. 1901.7.4.16.) collected at Aroa River, S.E. New Guinea by Herr Weiske. It measures 28.7 × 22.0 mm, and is very similar to the first egg described above but has slightly sparser though larger blotches and spots, and a slightly less dense zone at the large end. This is also of the race *E. c. pulcher*.

Ifrita k. kowaldi, Blue-capped Babbler (Timaliidae)

A nest and egg were collected on the Rawlinson Mountains, Huon Peninsula, Papua during September 1911 by Dr. C. Keysser.

Rand & Gilliard quote the following from L. W. Tho regarding the nest of this species:—"Twelve feet up in a slender sapling, a 'circular cup' (a domed nest?) bulky and heavily decorated with moss". The nest I have before me (reg. no. N193.456) is not in fact domed (as Rand & Gilliard queried) and fits this general description quite well. It is a deep, bulky, thick walled cup-shaped nest built externally almost entirely of green moss and some leaf-fern. A few very fine rootlets and twigs are also apparent. The lining is of fine hair-like brown tendrils, or rootlets, which form a smooth and strong interior to the cup. The external measurements are 101.5 mm in depth and 100.4 mm in diameter.

The single egg (Cl. no. 1941.9.4. 1704) is white, very slightly glossy and very sparsely spotted with clear black and purple-black spots and blotches, which are larger and more dense at the larger end. It measures 25.8 × 20.7 mm.

Pachycephala hyperythra reichenowi, Rufous breasted Whistler (Pachycephalidae)

A nest and two eggs were collected at Sattelberg, Huon Peninsula, New Guinea by Wahnes during November 1909.

The nest (reg. no. N193.458) is a bowl-shaped structure measuring 66.8 mm deep and 100.1 mm in diameter externally. The inside cup measures 41.0 deep and 58.8 mm in diameter. It consists very largely of small-leaved climbing ferns, some pieces of which are quite long. There are also some odd tendrils and pieces of moss. The cup is lined with pieces of dried leaves very sparsely covered with hair-like rootlets, possibly from some form of fern. The structure as a whole is fairly compact and quite light.

The eggs (Cl. no. 1941.9.4.1043. collector's no. 48) are a vinous buff, and are blotched and spotted with dark brown and dark grey. Like the eggs of *Pachycephala soror* (see Harrison & Frith 1970), the markings are concentrated in a broad band around the larger end with a few odd dark brown markings elsewhere. They measure 23.9 × 17.4 and 24.2 × 17.9 mm, but both are slightly cracked.

Another clutch of two eggs (Cl. no. 1941.9.4.1043, collector's no. 49), which were collected at the same locality as the above, but without accompanying nest, measure 22.4 × 16.9 and 22.3 × 17.3 mm. These are very similar to those described above but are slightly lighter in ground colour.

Astrapia rothschildi, Huon Astrapia (Paradisaeidae)

There are two nests of this species in the collections. They are very similar to each other in construction and shape but very different in size. Both were collected by C. Keysser from "Inland of Huon Gulf, S.E. New Guinea".

The smaller nest (reg. no. N193.255) has no date of collection. It is a firm shallow cup built mostly of vines, rootlets and creepers built onto a conspicuous foundation of large strong broad leaves and leaf pieces, leaf skeletons and pieces of moss. There are also additional odd pieces of moss on the outside of the structure, mostly on the rim. It is 154.2 mm in external diameter and 81.6 mm in depth. Internally the cup measures 94.9 mm in diameter and 39.8 mm in depth.

The larger nest (reg. no. N193.254) is very similar with perhaps a little less moss in evidence and also has some fine hair-like rootlets for lining. It measures externally 203.8 mm in diameter and 73.7 mm in depth.

Paradisaea guilielmi, Emperor of Germany's Bird of Paradise (Paradisaeidae)

A nest was collected by C. Keysser from "Inland of Huon Gulf, S.E. New Guinea.", but no date is given. It is a fairly firm deep cup measuring externally 94.1 mm deep and 148.0 mm in diameter. Internally it is 71.5 mm deep and 82.9 mm in diameter. As in the last species this structure is built on a firm foundation of large broad leaves. It is mostly constructed of creeper tendrils and vines which on average measure c. 1.6 mm in thickness, the heaviest piece being 2.8 mm thick and c. 263 mm in length. A few of these larger lengths of vine are beneath the leaf foundation, lending support to it. One of the creeper-like tendrils around the rim of the nest bears a number of fairly large oval leaves measuring c. 62.1 × 25.4 mm. Possibly this is used as some form of decoration. There is a thick and firm lining to the cup, consisting of very fine tendrils.

References:
Harrison, C. J. O. & Frith, C. B. 1970. Nest and eggs of some New Guinea Birds. *The Emu.* 70: 173–178.
Rand, A. L. & Gilliard, E. T. 1967. *Handbook of New Guinea Birds*. London: Weidenfeld & Nicolson.

Geographical variation and relationships in *Apalis chirindensis* Shelley and *Apalis melanocephala* (Fischer and Reichenow) in Rhodesia and southern Moçambique

by Michael P. Stuart Irwin & H. D. Jackson

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Introduction

Apalis chirindensis Shelley was almost always regarded as a monotypic species until Vincent (1949: 151–152) attached it as a race to the more widespread *Apalis melanocephala* (Fischer & Reichenow), a decision regarded as doubtful by Irwin (1963: 24). It was reinstated to full specific status by Clancey (1968a: 141) who pointed out that in several respects it is a relatively distinct species.

One of the diagnostic characters used by Clancey (*loc. cit.*) to separate *chirindensis* from *melanocephala* is the colour of the bill, normally wholly black in *Apalis* but pale in *chirindensis*. Recent work has, however, shown that this character is a geographically variable one, so we propose in this paper to re-examine the relationship of *chirindensis* to *melanocephala*.

Additional material recently collected enables us to further clarify the distribution and geographical variation of each form; this includes an isolated population of *chirindensis* discovered by M.P.S.I. on Gorongosa Mountain in Moçambique.

We conclude that *chirindensis* is a good species, more closely related to *melanocephala* than to anything else.

Distribution of *Apalis chirindensis*

Apalis chirindensis is found principally in the canopy of montane evergreen forest, and has a rather limited distribution in eastern Rhodesia and adjacent Moçambique, with an isolated population on Gorongosa Mountain. Following the closed forest formation classification of Wild & Fernandes (1967), *chirindensis* can be shown to occur primarily in type (7), i.e. *moist broad leaved montane forest*, which is widespread above 1,700 m; and to a lesser extent in type (1), i.e. *moist evergreen forest at low and medium altitudes*. Such forests occur along the mountain chain forming the frontier zone between Rhodesia and Moçambique, over a distance of some 300 km from the Inyanga Highlands at 17°50′S., to the Chirinda Forest of Mount Selinda at 20°25′S. And an isolated block of type (7) occurs above 1,200 m on Gorongosa Mountain, some 105 km to the east of the Inyanga Highlands; the intervening terrain of the Manica Platform is dominated by Miombo woodland which is ecologically unsuitable for *chirindensis*. *A. chirindensis* is restricted in its distribution to these two areas, and so qualifies as one of the "rare birds of Africa" as defined by Hall & Moreau (1962).

While essentially a montane bird, ascending to at least 2,400 m on Inyangani Mountain, it also occurs sporadically below 1,000 m. Thus in forest of type (1) in the Pungwe Valley, M.P.S.I. obtained a pair in a patch of *Newtonia buchananii* at 700 m; both were in breeding condition, on 23rd October, the female having yolking oocytes, so it must be assumed that they would have bred in the vicinity. It has also been taken in type (1) forest in the Haroni-Lusitu confluence area, at 20°02'S., 33°01'E., where a full-grown but immature female was found on 10th January in the Makurupini Forest at 425 m. It is this forest type which occurs between 1,050 m and 1,250 m on Mount Selinda, the type locality, where *chirindensis* is abundant.

Distribution of and variation in *Apalis melanocephala* south of the Zambezi River

In the southern part of its range, *Apalis melanocephala* has an essentially lowland distribution, and in the region under discussion is known no higher than 375 m, which is close to the lowest altitude at which *chirindensis* has been taken. Again following the forest classification of Wild & Fernandes (1967), it can be shown that *melanocephala* is found principally in type (5), i.e. *dry semi-deciduous lowland (sublittoral) forest*, but it also ranges into type (6), i.e. *dry deciduous lowland forest*, and commonly occurs in the forest component of type (9), i.e. *mosaic of moist semi-deciduous forest and Miombo woodland.*

Three forms can be shown to occur south of the Zambezi. *A. m. addenda* Clancey (1968b: 193) is found south of the Save River to about Inhambane but has not been examined by us personally. It is replaced to the north by *A. m. lightoni* Roberts in the forests around Dondo and at the Haroni-Lusitu confluence in the Makurupini Forest, the only locality from which it is known in Rhodesia. Birds from still further north appear to represent *A. m. adjacens* Clancey (1969: 93), hitherto considered to occur only in montane forest in southern Malawi and at Unangu (Njesi Plateau) in northern Moçambique. In support of this statement, three specimens from the Inhamitanga Forest at 18°15'S., 35°15'E., are creamy below and lack the greyish wash found in *lightoni*. Unfortunately the upper parts are too heavily worn to be readily diagnostic, but two of the birds are adult males having tails of 62 and 66 mm as against an average of 60.0 mm (58–65) for seven male topotypes of *lightoni*. Four specimens from the Chiniziua District at 19°00'S., 35°16'E., are also creamier below than a series of twenty *lightoni* from Dondo (19°34'S., 34°34'E.), and may be regarded as intermediate between *lightoni* and *adjacens*. Perhaps variation in most of these southern populations is clinal, and the species much more generally distributed than we previously thought. Certainly it is not an easy bird to collect, and many more intermediate stations must exist. In this part of Moçambique, from Beira north to the Zambezi, it is found only on the eastern side of the watershed of the Cheringoma Plateau; further to the west the mosiac of closed forest formations becomes replaced by drier Miombo woodland, and finally by the rain shadow area of the Gorongosa Rift, both ecologically unsuited to *melanocephala*.

In all forms the bill is entirely black, differentiation being based on other characters such as tail length and colour of the underparts.

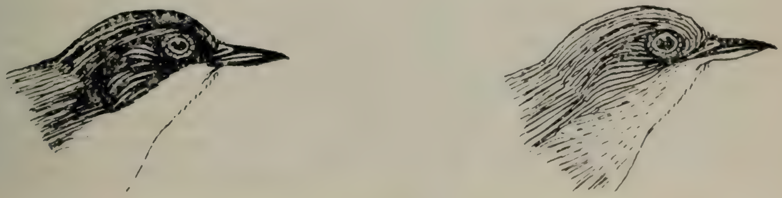
Allopatry

From the above it will be seen that the distributions of *chirindensis* and *melanocephala* are allopatric with a single point of contact at around 400 m in the Makurupini Forest at Haroni-Lusitu. Generally, *chirindensis* occurs west of the Manica Platform in the montane areas of the border zone, while *melanocephala* occurs east of the Manica Platform in the Moçambique lowlands. The Gorongosa Mountain population of *chirindensis* is a true isolate, separated from the rest of the species by the unsuitable habitat of the Manica Platform; although it occurs on the eastern edge of this Platform, it is nevertheless separated from the populations of *melanocephala* at this latitude by the Gorongosa Rift and the Cheringoma Plateau. On present knowledge the Haroni-Lusitu population of *melanocephala* appears to be isolated from the rest of the species, but this is probably due to the fact that the area between there and the lowlands proper has not been adequately explored ornithologically; it may well be that *melanocephala* will be found to occur in the type (2) forest running along the edge of the Manica Platform, i.e. *moist semi-deciduous forest*.

The mountain chain occupied by *chirindensis* runs in a north-south direction. The edge of the Manica Platform, defining the western limit of the range of *melanocephala*, runs in a northeast-southwest direction. These physical features meet at the Haroni-Lusitu confluence area, and both *chirindensis* and *melanocephala* have been taken there in the Makurupini Forest (type 1). However, the *chirindensis* material consists of a single specimen, and that, although fully grown, is immature, so no sympatry between the two forms can be claimed; until further material is obtained from there, the Haroni-Lusitu is best regarded as a point of contact between the two without evidence of intergradation, and as such provides a limited contribution towards an understanding of their relationship.

Variation in *Apalis chirindensis*

Clancey (1968a: 141) has outlined the specific characters of *chirindensis*. On this basis, and as shown in the Figure, it differs clearly from *melanocephala*, and indeed from nearly all other members of the genus *Apalis*, in that the sides of the face are not clearly demarcated from the chin and throat, as is usually the case in *Apalis*; the only other exceptions to this generalisation occur when the whole head is uniform in colour, thus masking out the normal pattern, as in *Apalis sharpii*.



Facial and bill patterns in *A. melanocephala* (left) and *A. chirindensis* (right).

Another character used by Clancey is the colour of the bill, normally wholly black in *Apalis*, but pale in *chirindensis*. Subsequent work has shown this character to be a geographically variable one in *chirindensis*, the usual colour pattern being: maxilla dusky to black; mandible flesh tipped with dusky; less often the bill is wholly dusky or black and a few intermediates are known. Except at the type locality the bill pattern within each deme is constant, as shown in the following table, based mainly on material in the National Museum, Bulawayo, and in the Umtali Museum, Umtali:—

TABLE I

Apalis chirindensis: bill colour variation from north to south

	Locality	*Latitude*	*Specimens*	*Colours (Maxilla/Mandible)*
	Gorongosa Mountain	18°02′S.	1♂ 1♀	black/black
(1)	Inyanga Highlands	18°17′S. to 18°25′S.	30♂♂ 15♀♀	black/flesh
(2)	Stapleford	18°41′S.	11♂♂ 5♀♀	black/flesh
	Cecil Kop, Umtali	18°56′S.	2♂♂	black/flesh
(3)	Vumba Highlands	19°07′S.	2♂♂ 2♀♀	black/flesh
	Banti	19°20′S.	1♂ 1♀	black/black
	Musapa Mountain	19°42′S.	2♂♂ 1♀	black/black
	Chimanimani Mountain	19°50′S.	2♀♀	black/flesh
	Haroni-Lusitu area	20°01′S.	1♀	black/flesh
	Mount Selinda	20°25′S.	2♂♂ 1♀	black/black

(1) includes 3♂♂ 1♀ listed by Mees (1970: 42)

(2) includes 5♂♂ 6♀♀ listed by Clancey (1968a: 141)

(3) includes 1♀ in BM(NH); details supplied by C. W. Benson (*in litt.*)

Note: "Black" as used above includes "sepia" "dusky" and "horn"; "flesh" includes "pink" "pinkish white" and "brownish white"

Subject to the ensuing discussion, bill colour appears to be constant within each deme. Taking the Inyanga series of 45 specimens, in none of this material is there even an approach to a wholly black-billed condition, although in a few individuals the culmen is a somewhat darker horn colour than in others. The long series from Stapleford is equally consistent. The series from the other localities are small in each case, so their uniformity is not quite so significant. Only from the Chirinda Forest at Mount Selinda is there evidence of variation within a single deme; since this is the type locality we shall deal with the variation there at some length.

In the original description of the species Shelley (1906: 126) gives the bill as blackish, but Swynnerton (1908: 75), who obtained the type, mentions that birds from there vary somewhat in bill colour, "the gonys being sometimes blackish like the upper mandible, at others brownish white, either at the base or throughout its length". There are six Chirinda specimens in the British Museum (Natural History), and Mr. C. W. Benson has kindly examined this material on our behalf, giving the colours as recorded by the collector (Swynnerton) and as they appear today, more than sixty years later:—

TABLE II

Apalis chirindensis specimens from Mount Selinda in BM(NH)

Registration no.	*Sex*	*Maxilla*	*Mandible*	*Present condition*
1911.5.30.30	♂	black	black	dark sepia
1911.5.30.32	♀	dusky	pink	sepia/buffy
1911.5.30.33 (type)	? imm.	sepia	much paler	sepia/buffy
1911.5.30.34	♂ imm.	dusky	pale yellowish brown	much as next, but apical half of mandible missing
1911.5.30.35	♂	blackish	brownish white	dark sepia/buffy at base of mandible
1911.5.30.124	?	blackish	blackish	very dark sepia

Benson considers that only the first and last specimens listed above would have had wholly black bills in life. Bangs (1931: 67) records another topotype, obtained by Dr. J. H. Sandground and now in the Museum of Comparative

Zoology, Harvard. Dr. R. A. Paynter (*in litt.*) kindly reports that, while the collector made no notes as to the bill colour, it is now rather light.

The three National Museum specimens from this locality, listed in Table I, were obtained by M.P.S.I. in late September and early October, 1970, in an attempt to reconcile the situation there. All had the bill entirely black. Unfortunately it was not possible to obtain a more adequate series, for, although very common, the species keeps to the very tall forest canopy usually quite out of collecting range. The possibility that bill colour may vary seasonally, wholly black bills perhaps being assumed in the breeding season only, is suggested by this short series. However, investigation of the collection dates as a whole reveals no such correlation; neither is there any correlation between bill colour and the age of the bird. It has therefore to be accepted that the Mount Selinda birds show individual variation in this character, with black bills perhaps predominating.

Elsewhere within the range of the species, bill colour within a deme remains constant, but from Table I above it will be seen that geographically the variation between demes appears to be random. Of all the demes involved, only that found on Gorongosa Mountain is a complete isolate. In the frontier zone there would appear to be no significant barrier between any two demes. Gaps between the various larger forest patches certainly exist to some extent at the present time, but none would appear to be of any importance to either this or any other forest species, and therefore unlikely to constitute an effective barrier. Thus while the forests of the Inyanga Highlands are cut off from those at Stapleford by the low lying Honde Valley, they are connected by high ground above 1,200 m around the western rim of this valley; scattered forest patches occur southwards to Umtali and the Vumba. Between the Vumba and Banti the contours drop to around 1,000 m, and a very slight break could conceivably exist here at the present time. An abrupt change in bill colour takes place between Musapa Mountain and the Chimanimani ranges, but again there does not appear to be any natural barrier to explain it. Even the Mount Selinda deme must be linked to the others by the various forest patches in the Chipinga District, although there may be a very narrow and ineffective gap along the Lusitu River. It must be remembered that all these forests, including even that on Gorongosa Mountain, must have been continuously distributed within the last 15,000 to 18,000 years (Moreau 1966), and even within the historical period are likely to have been more extensive than they are now.

Discussion

Hall & Moreau (1970: 411), in an appendix to their Atlas, mention the black-billed Banti population of *chirindensis*, and this might be taken to infer some form of intergradation with *melanocephala*. However, as discussed under the distributions above, and as correctly plotted on the Atlas map no. 220, the two species are known to come into contact at a single point considerably further south, and at that point there is no evidence of intergradation. Unfortunately, there is also no evidence that *chirindensis* breeds there, the single immature specimen taken possibly having moved down from the forests higher up; there is direct access to forest of type (7) along the Haroni River. However, there is no evidence of seasonal movement in *chirindensis*, and the uniformity of bill colour within each deme suggests that such movements are unlikely. Both *chirindensis* and *melanocephala* appear to be strictly sedentary, so it is possible that they occur sympatrically in the Makurupini Forest, but further material from there is required to prove this.

For the present, our assessment of the relationship between *chirindensis* and *melanocephala* must accordingly rest on differences in morphology and behaviour. Morphologically, *chirindensis* lacks the facial contrast so characteristic of *Apalis* in general and of *A. melanocephala* in particular. This clearly sets it apart, as does the variability of bill colour, a character which is not displayed by *melanocephala*, or any other *Apalis* so far as is known. Little is known of the behaviour of these birds; their habits appear to be very similar and they occupy the same niche, but in discrete forest types except at the one point where these forests meet. However, the voices are clearly distinguishable in the field, even though similar in form, and these differences have been confirmed by Mr. G. S. Keith (*in litt.*) who has obtained tape recordings of the songs of both. The nest and eggs of *chirindensis* are undescribed (see below), so no comparative evidence is available in this direction.

Quite how closely related *chirindensis* and *melanocephala* are is not easy to decide, but there seems to be no reason why they should not have arisen from an immediate common ancestor. *A. chirindensis* is in some respects a rather aberrant *Apalis*, exhibiting differences which would hasten the process of speciation, which we believe has proceeded to a point where *chirindensis* has become a good species, and is the montane counterpart of *melanocephala* in the southern part of the latter's range. There is evidence that it descends to lower levels in the absence of *melanocephala*, e.g. at Pungwe at 700 m. There is also evidence that *melanocephala* (in the northern part of its range) ascends to higher levels in the absence of *chirindensis*; thus in southern Malawi Benson (1953: 59) records it to as high as 5,000 feet (1,500 m). More work is required in the Makurupini Forest, and the Haroni-Lusitu area generally, to establish just what the situation is there, but from the evidence available at present it would seem that we are here dealing with a parapatric distribution as described by Mayr (1969: 13–14); *chirindensis* and *melanocephala* appear to be reproductively isolated from one another but are ecologically incompatible, hence the absence of sympatry.

Miscellaneous

It is perhaps as well to draw attention to certain errors and misconceptions involving these two species appearing in two recent works. Thus in McLachlan & Liversidge (1970: 429–430), the breeding record by Sheppard, mentioned under *A. melanocephala* and carried over from previous editions of this work, was in fact originally attributed to *A. chirindensis*, but as proved by Brooke (1966: 444–445) applies to *Prinia robertsi*, the nest and eggs of *chirindensis* remaining undescribed. Also incorrect is the statement that *chirindensis* occurs " . . .in coastal forest typically with Usnea", for as shown above this is a highland species. The distribution map given is a composite, showing the combined ranges of the two species; this is not made clear, and in fact the impression gained is that it applies to *chirindensis* only. Also Clancey (in Winterbottom 1969: 226) lists *lightoni* as a race of *chirindensis*, *contra* the original arrangement in Clancey (1966: 480), and from this it is to be assumed that *lightoni*, for unstated reasons, is no longer considered a race of *melanocephala*. This was the arrangement adopted by Roberts (1938: 119) in describing the race *lightoni*, and was repeated by Roberts (1940: 361) but not by any subsequent author. However, Clancey (*in litt.*) has informed us that although this manuscript was originally based on his "Catalogue" this change in nomenclatural status was made subsequently by Winterbottom in his capacity as co-ordinating editor.

Summary

Apalis chirindensis and *A. melanocephala* are considered to be distinct species, *chirindensis* occurring principally in montane forest, and *melanocephala* in lowland (coastal) forest. They are allopatric in distribution with a considerable gap separating their ranges for the most part, but at a single point in Rhodesia they meet and form a parapatric distributional pattern without any evidence of hybridisation.

A. chirindensis differs most clearly from *melanocephala* in the colour of the underparts and in the slightly aberrant facial pattern, lacking any sharp contrast between the sides of the face and the chin and throat, so characteristic of most forms of *Apalis*. Distinct differences also exist in the voices which, however, have similar patterns; there appear to be no other behavioural differences.

In *chirindensis* the colour of the bill varies geographically in random fashion, but is constant within each deme except at the type locality where some specimens have entirely black bills (as is usual in the genus); others have the lower mandible flesh coloured, and some are intermediate.

It is suggested that *chirindensis* and *melanocephala* are derived from an immediate common ancestor, *chirindensis* having diverged more than *melanocephala*, and that speciation has proceeded to a point where these two are discrete parapatric species, i.e. are reproductively isolated but compete ecologically.

Acknowledgements

Our thanks are due to Mr. C. W. Benson who most kindly reported at length on the material of *chirindensis* in the British Museum (Natural History), and to R. A. R. Black who did the drawing of the *Apalis* heads.

References:

Bangs, O. 1931. A small collection of birds from the Selinda Forest. *Proc. N. Engl. Zool. Cl.* 12: 55–76.

Benson, C. W. 1953. *A check list of the birds of Nyasaland.* Blantyre and Lusaka: Nyasaland Society and Publications Bureau.

Brooke, R. K. 1966. Distribution and breeding notes on the birds of the central frontier of Rhodesia and Moçambique. *Ann. Natal Mus.* 18 (2): 429–453.

Clancey, P. A. 1966. A catalogue of the birds of the South African sub-region, part IV. *Durban Mus. Novit.* 7(12): 465–543.

— 1968a. Subspeciation in some birds from Rhodesia. *Durban Mus. Novit.* 8(11): 115–152.

— 1968b. Miscellaneous taxonomic notes on African birds. *Durban Mus. Novit.* 8(13): 183–198.

— 1969. An undescribed race of Black-headed Apalis. *Bull. Brit. Orn. Cl.* 89: 92–94.

Hall, B. P. & Moreau, R. E. 1962. A study of the rare birds of Africa. *Bull. Brit. Mus. (Nat. Hist.) Zool.* 8(7): 315–378.

— 1970. *An Atlas of speciation in African passerine birds.* London: Trustees of the British Museum (Nat. Hist.).

Irwin, M. P. S. 1963. Systematic and distributional notes on southern African birds. *Durban Mus. Novit.* 7(1): 17–26.

Mayr, E. 1969. Speciation in tropical environments *Biol. J. Linn. Soc.* 1(1–2): 1–17. London: Academic Press.

McLachlan, G. R. & Liversidge, R. L. 1970. *Roberts birds of South Africa.* 3rd ed. Cape Town: The Trustees of the John Voelcker Bird Book Fund.

Mees, G. F. 1970. Birds of the Inyanga National Park, Rhodesia. *Zool. Verh. Leiden* (109): 42.

Roberts, A. 1938. Reviews and records. *Ostrich* 9: 105–119.

— 1940. *The birds of South Africa.* Cape Town: Central News Agency and H. F. and G. Witherby.

Shelley, G. E. 1906. *Apalis chirindensis* sp.n. *Bull. Brit. Orn. Cl.* 16 :126.

Swynnerton, C. F. M. 1908. Further notes on the birds of Gazaland. *Ibis* 50: 1–107.

Vincent, J. 1949. Systematic notes (Part IV). *Ostrich* 20: 145–152.

Wild, H. & Fernandes, A. 1967 *Vegetation map of the Flora Zambesiaca area.* Flora Zambesiaca supplement. Salisbury: M.O. Collins

Winterbottom, J. M. (ed.) 1969. *Check List of the birds of South Africa.* Cape Town: South African Ornithological Society List Committee.

(The cost of the Figure in the above paper was borne by the authors. They have asked me to state that the specimens of *A. Melanocephala* from Inhamitanga, Chiniziua and Dondo are in the National Museum, Bulawayo—Ed.)

Notes on *Terpsiphone* and *Coracina* spp. in the Malagasy Region

by C. W. Benson

Received 24th January, 1971

These notes result from studies in the British Museum (Natural History), London, the Muséum National d'Histoire Naturelle, Paris, and the University Museum of Zoology, Cambridge. The collections of birds in the last named are under my care. I am grateful to the authorities concerned for all necessary facilities, and particularly to Dr. F. Roux in Paris, who also allowed me to borrow specimens of *T. b. bourbonnensis.*

Terpsiphone mutata (Linnaeus)

Benson (1960b: 200–201) gave bill/wing ratios for some species in the Comoros showing a higher ratio than in the same species in Madagascar, and none lower. According to Benson & Penny (*Phil. Trans. R. Soc.* B 260, 1971), on Aldabra *Nesillas aldabranus* and *Dicrurus aldabranus* are also relatively long-billed, although there is an exception in that *Nectarinia sovimanga* stock in the Aldabra and Comoro archipelagos as a whole is short-billed. Benson (1960b) did not give any figures for *T. mutata,* because (1960a: 73) he provided wing-lengths but no bill-lengths. This deficiency is now remedied in Table 1. The Comoro wing-lengths are the same as in Benson (1960a), with the addition of a few from specimens from Anjouan and Grand Comoro in Cambridge.

The Comoro samples are relatively small, though on all four islands the bill is evidently longer than in Madagascar. But on Grand Comoro the difference amounts merely to a slightly higher ratio in the female only. The difference is best marked on Anjouan and Moheli, though the sample from Moheli is particularly small. In *Nesillas typica,* too, the difference is better marked on Anjouan than on Grand Comoro. Grant (*Evolution* 19, 1965: 364) has suggested that island birds often have longer bills than their mainland counterparts to enable them to deal with a greater range of food-sizes, resulting from the frequent absence on islands of other species with similar ecological requirements. *Terpsiphone mutata* on Anjouan and Grand Comoro is a forest dweller, as is also *N. typica,* though it is perhaps significant that Benson (1960a: 82) found the latter more catholic in habitat on Anjouan than on Grand Comoro. The only other species of at all similar size which these two insectivores are likely to come frequently into contact with, and so compete with, is the strictly forest dwelling *Humblotia flavirostris,* which is however confined to Grand Comoro. This may help explain their longer bills on Anjouan. Other possible competitors, to a lesser degree, are *Zosterops* and *Nectarinia* spp., but not so strictly confined to forest. Nevertheless it is also interesting than *N. notata,* like *Humblotia,* is present on Grand Comoro but not on Anjouan. Competition should be at a minimum on Mayotte, since not only are *Humblotia* and *Nectarinia notata* unrepresented but so too is

Nesillas. Thus the bill-length in *T. mutata* might be expected to be higher than shown in the table. But Mayotte is the nearest of the islands to Madagascar, and the likelihood of gene-flow from what is presumably the parent stock is accordingly greater. In contrast to the other three Comoros, sexual dimorphism in colour and tail-length has not been reduced; see below.

Table 1. Some measurements for *Terpsiphone mutata*, in millimetres

		Wing		Culmen from base	$\frac{100 \times \text{culmen}}{\text{wing}}$
		Madagascar (*T. m. mutata*)			
	number		number		
♂♂	146	74–82 (78.7)	141	15–18 (16.8)	21.3
♀♀	51	70–78 (75.1)	51	15–18 (16.2)	21.6
		Mayotte (*T. m. pretiosa*)			
♂♂	22	73–79 (75.8)	19	16.5–18.5 (17.3)	22.7
♀♀	9	70–75 (72.5)	6	16.5–17.5 (17.0)	23.4
		Anjouan (*T. m. vulpina*)			
♂♂	17	74–79 (76.8)	18	17.5–19 (18.2)	23.7
♀♀	14	69–75 (72.4)	12	17–19 (17.6)	24.3
		Moheli (*T. m. voelzkowiana*)			
♂♂	5	73–76 (74.8)	5	17–18 (17.4)	23.3
♀♀	6	68–73 (70.6)	6	16–18 (17.0)	24.0
		Grand Comoro (*T. m. comorensis*)			
♂♂	15	72–78 (75.7)	15	15–17 (16.2)	21.3
♀♀	12	70–74 (71.9)	12	15–17 (15.9)	22.0

In all five series of figures, the bill/wing ratio is higher in females than in males, more especially in the Comoros, so small in area in comparison with Madagascar. This tendency in the Comoros is the opposite of what might be expected from Selander (1966: 143), who has pointed out that sexual dimorphism in the feeding apparatus occurs more frequently in insular birds than would be expected on the basis of chance alone. Incidentally, an inspection of bill/wing ratios in the family Dicruridae as a whole (Vaurie, *Bull. Amer. Mus. Nat. Hist.* 93, 1949: 333–335) shows that it is much more frequently higher in females, although the difference in wing-length between the sexes averages less than in *T. mutata*.

The tail-lengths for the Comoro forms provided by Benson (1960a: 73) indicate much variability, both inter-island and intra-island, particularly in males, Mayotte males attaining the greatest length. A male in Cambridge from Anjouan measures as much as 193 mm. One Malagasy male in the black phase measures as much as 246 mm, a white phase 227 mm, and a maroon phase 254 mm, while females measure up to 87 mm. Tail-length possibly increases with age, though specimens have been examined which had enlarged testes, yet with tail-lengths less than 100 mm. But some others collected in June and July have tails exceeding 200 mm (egg-laying is evidently mainly in October and November, see Rand, *Bull. Amer. Mus. Nat. Hist.* 72, 1936: 433, and Benson, 1960a: 74–75).

It is well known that forms on small islands often tend to show a reduction in sexual dimorphism. This does not appear to be so on Mayotte, the nearest of the four Comoros to Madagascar. But on the other three, the greatest tail-lengths for males are less than on Mayotte and Madagascar. This applies in particular to Moheli, although the sample from this island is very small. Also, males on these three islands are always chestnut in colour, like females, whereas on Mayotte and Madagascar maroon and white phases occur (on Madagascar also a black phase).

Terpsiphone bourbonnensis (P. L. S. Müller)

Salomonsen (1933: 612–614) points out certain similarities between this species, inhabiting Réunion and Mauritius, and the Asiatic *T. affinis* (Blyth) and *paradisi* (Linnaeus), but concluded that it was derived from *mutata*. On geographical grounds this is the most likely. But it has become so strongly differentiated that it is impossible to be at all sure about its ancestry, and it should be remembered that there are other land birds in the Mascarenes apparently of direct Asiatic origin, viz. *Psittacula* spp. and *Collocalia francica*. Yet further examples are drawn attention to by Bourne (*Ibis*, 1968: 343). Salomonsen separated the Mauritius birds as a distinct species, which he called *desolata*, but I agree with Berlioz (1946: 56) that the degree of difference seems no more than subspecific. In both sexes *desolata* is a little darker grey below and darker chestnut above than in nominate *bourbonnensis*. A more marked difference is that in adult males *desolata* has the crown and sides of the head more purplish glossed, the gloss extending onto the nape, which in *bourbonnensis* is an unglossed grey. My measurements, in millimetres, are:—

	Wing	Tail	Culmen from base
		T. b. bourbonnensis	
2♂♂	70, 70	75, one incomplete	15.5, 16
9♀♀	65–70 (67.9)	65–73 (69.5)	15–16 (15.3)
		T. b. desolata	
9♂♂	70–77 (73.5)	71–78 (74.2)	16–17.5 (16.4)
4♀♀	69–73 (70.7)	68–73 (70.5)	15–17 (16.4)

I can also agree with Salomonsen that *desolata* is the larger. Bill/wing ratios work out at 22.5 for both sexes of *bourbonnensis;* 22.3 for the male of *desolata*, 23.2 for the female. These figures are only a little higher than for *T. mutata* on Madagascar and Grand Comoro, but not so high as for the other three Comoros.

Sexual dimorphism in *T. bourbonnensis* is slight, less marked than in any form of *mutata*. There is no appreciable lengthening of the tail in the male, and the only difference in colour is that the male has the crown and sides of the head much more glossy than has the female. There is no sign of white in the greater primary coverts, always white in adult males of *mutata*.

There is in Cambridge an undated and unsexed feathered nestling, labelled by Edward Newton as from Mauritius. It has wing 53, culmen from base 12.5 mm. It lacks a tail. It is chestnut in colour, including the whole of the head; the abdomen greyish white; the primaries and their coverts and the greater wing-coverts dark brown, and the secondaries dark brown with the margins of the outer webs chestnut.

Terpsiphone corvina (E. Newton)

Gaymer *et al.* (*Ibis*, 1969: 170) suggest that this very distinct species, endemic to the Seychelles, may have a Malagasy ancestry. This may be so, though the same possibility applies as with *bourbonnensis*. Hall & Moreau (1970: 230) place both *corvina* and *atrochalybea* of São Tomé as derivatives of the African *viridis*. There can scarcely be any doubt that this applies for *atrochalybea*. If it does also for *corvina*, it was probably derived from *viridis* stock which had first invaded Madagascar.

Measurements are given in Table 2. Unlike *Foudia sechellarum* (see Benson, *Bull. Brit. Orn. Cl.*, 1971: 4), there is no indication of any inter-island difference, nor is there any difference in colour. As with *mutata*, there is much variation in the tail-lengths of males. Gaymer *et al.* (1969: 169) suggest that this is related to age, younger birds having shorter tails. A male in Paris from Marianne with a tail-length of 125 mm only has some feathers which instead of being the normal dark blue are a mixture of this colour and chestnut or (on the abdomen) white, as detailed by Salomonsen (1933: 611); another in London, marked "Seychelles", tail 167 mm, having some white fringes on the abdomen. Salomonsen points out that the first of these two may represent a more primitive stage, and that the second represents the normal aspect in *atrochalybea*. Possibly neither is fully adult, but all of the other males measured, some of which have shorter tails, have the plumage entirely dark blue. Nevertheless, it may be that in both *mutata* and *corvina* the tail-length does increase with age. As with *mutata*, the variability is unlikely to be seasonal. All four Marianne males, with tails ranging from 111 to 271 mm, were collected in September, which according to Gaymer *et al.* is just before the start of the main breeding season. From wing-lengths, *corvina* is a larger species than *mutata*, the tail in the male about the same length in proportion. There is a more accentuated sexual difference in the bill/wing ratio than in *mutata*, the figure for the female being as much as 1.8 higher than for the male. The measurements were very carefully taken, and presumably reflect the truth. While the ratios are higher than for *mutata* on Madagascar, they are no higher than some of the Comoro ratios.

Table 2. Some measurements for *Terpsiphone corvina*, in millimetres

Wing	Tail	Culmen from base
	(1) Males	
	Marianne	
88, 89, 90, 91	111, 125, 202, 271	19, 19, 20, one broken
	Praslin	
87, 88, 88, 89, 90, 90, 91, 92, 92	83, 116, 222, 246, 247, 259, 272, 277, 291	19, 20, 20, 20, 20.5, 21, 21, 22, one broken
	La Digue	
87, 90, 91, 92	176, 247, 250, 262	19, 20, 21.5, 22
	"Seychelles" (no island specified)	
87, 88, 88, 88, 89, 90, 93, 93	112, 167, 213, 260, 260, 264, 296, 301	19, 19, 19, 20.5, 20.5, 21, 21, 21.5
	Overall combined figures	
87–93 (89.6)	83–301	19–22 (20.2)
	(2) Females	
	Marianne	
78, 86	89, 110	19, 20
	Praslin	
82, 82, 84	84, 92, 103	19.5, 19.5, 21
	La Digue	
80, 81, 85, 85, 86	83, 88, 89, 102, 105	19.5, 20, 20, 20, 21
	"Seychelles" (no island specified)	
78, 81, 84	76, 91, 95	18.5, 21, 21.5
	Overall combined figures	
78–86 (82.4)	83–110	18.5–21.5 (20.0)

$\frac{100 \times \text{bill}}{\text{wing}}$: 22.5 for ♂♂, 24.3 for ♀♀

It might be expected that in so remote an archipelago as the Seychelles sexual dimorphism would have been reduced, as is the case with *T. bourbonnensis* in the Mascarenes and indeed with *Nectarinia dussumieri* and *Foudia sechellarum* in the Seychelles. In fact it is still very well marked, both in tail-length and in colour. There is a considerable resemblance, in the respective sexes, between *corvina* and *atrochalybea*. [*to be continued*]

Bulletin of Zoological Nomenclature: Opinions

In continuation of *Bull. Brit. Orn. Cl.* 89, 1969: 171–172, and by permission of the International Trust for Zoological Nomenclature, the following Rulings are quoted as extracts from Opinions published in *Bull. Zool. Nomencl.* affecting birds:—

Opinion 890 (*Bull. Zool. Nomencl.* 26(3), 1969: 141)

The following work is hereby placed on the Official List of Works approved as Available for Zoological Nomenclature with the Title Number 42:

Kerr, Robert, 1792. The Animal Kingdom or Zoological System of the celebrated Sir Charles Linnaeus; Class I Mammalia (Class 2 The Birds) . . . being a translation of that part of the Systema Naturae, as . . . published by Prof. Gmelin . . . with numerous additions from more recent zoological writers. London.

Opinion 895 (*Bull. Zool. Nomencl.* 26(5/6), 1970: 194)

(1) Under the plenary powers the specific name *capensis* Daudin, 1800, as published in the combination *Strix bubo capensis*, is hereby suppressed for the purposes of both the Law of Priority and the Law of Homonymy.

(2) The specific name *capensis* Daudin, 1800, as published in the combination *Strix bubo capensis* (as suppressed under the plenary powers in (1) above) is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology with the Name Number 911.

(3) The specific name *capensis* Smith, 1834, as published in the binomen *Strix capensis*, is hereby placed on the Official List of Specific Names in Zoology with the Name Number 2341.

Opinion 904 (*Bull. Zool. Nomencl.* 26 (5/6), 1970: 225)

(1) The specific name *pleschanka* Lepechin, 1770, as published in the binomen *Motacilla pleschanka*, which was first published in a non-binominal work, is hereby validated under the plenary powers and is ruled to have precedence over the specific name *leucomela* Pallas, 1770, as published in the binomen *Motacilla leucomela*.

(2) The following specific names are hereby added to the Official List of Specific Names in Zoology with the Name Numbers specified:

(a) *caspia* Pallas, 1770, as published in the binomen *Sterna caspia* (Name No. 2363);

(b) *pleschanka* Lepechin, 1770, as published in the binomen *Moticalla pleschanka* (validated under the plenary powers in (1) above) (Name No. 2364).

(3) The specific name *tschegrava* Lepechin, 1770, as published in the binomen *Sterna tschegrava* (a name published in a non-binominal work) is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology with the Name Number 922.

CONTRIBUTORS

Contributions are not restricted to members of the Club. They should be addressed personally to the Editor, C. W. Benson, Department of Zoology, Downing Street, Cambridge. Contributions are accepted on condition that sole publication is offered in the first instance to this *Bulletin*. They should be type-written, double-spaced, with wide margins, on one side of the paper, and submitted in duplicate.

References to literature should be in the same format as in the notice to contributors to the *Ibis* (see any 1970 number). Considerations similar to those in the *Ibis* notice also apply in regard to nomenclature, scientific names of species and genera, and illustrations including photographs. But illustrations including photographs can only normally be considered if the contributor is willing to pay for the cost of their reproduction.

Contributors introducing a new name or describing a new form should append *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In such a description, the introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further headings as required.

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CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, D. R. Calder, "Rustings", Madeira Road, West Byfleet, Woking, Surrey.

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Bulletin of the BRITISH ORNITHOLOGISTS' CLUB

Vol. 91 No. 3* Published: 21st June, 1971

The six hundred and seventieth meeting of the Club was held at the Criterion in Piccadilly, London, S.W.1 on Tuesday, 18th May, 1971 at 7 p.m.

Chairman: Dr. J. F. Monk; present: 17 members and 7 guests.

The speaker was Dr. J. J. M. Flegg who addressed the members on the Birds of St. Kilda and illustrated his address with coloured slides.

The meeting was proceded by the seventy-ninth annual general meeting of the Club, the minutes of which meeting will be published in a later issue of the Bulletin.

Notes on *Terpsiphone* and *Coracina* spp. in the Malagasy region

by C. W. Benson

(PART II)

Received 24th January, 1971

There is in Cambridge an unsexed feathered nestling, collected by J. J. Lister on Praslin on 19th February 1888. It has wing 60, tail 20, culmen from base 14.5 mm. The plumage is wholly chestnut (with no sign of white on the abdomen as in the adult female), except for the primaries and their coverts, and the greater wing-coverts, which are dark brown, while the secondaries are dark brown margined with chestnut.

T. corvina now survives apparently only on La Digue. Penny (*Oryx*, 1968: 268) records it otherwise only from Praslin, where specimens were taken in 1865 (these are E. Newton's specimens, in Cambridge, and actually dated February 1867), and Marianne, where it was collected most recently by W. L. Abbott, in 1892. Vesey-FitzGerald (*Ibis*, 1940: 481) states that it "occurred very recently" on Praslin and Felicity, without further detail. Nicoll (*Ibis*, 1906: 708–709) indicates that he collected an adult male on Praslin, and another on Felicity, in April 1906. The British Museum register (1906. 12. 21. 287–289) shows that he collected three adults males, all on Praslin, but only one of them was found, from Praslin. According to Loustau-Lalanne (*Seychelles Soc. Occ. Publ.* 1, 1962), it occurred on Curieuse in 1906, but he gives no detail. From the foregoing evidence, only La Digue, Praslin and Marianne can be accepted for the occurrence (present or former) of *T. corvina.*

Coracina spp.

The genus *Coquus* was proposed by Sclater (*Ibis*, 1914: 174) for *Coracina typica* (Hartlaub) of Mauritius and *C. newtoni* (Pollen) of Réunion, in substitution for *Oxynotus* Swainson. Berlioz (1946: 60) has pointed out that *Coquus* is near to *Coracina*, even though there is no immediate relative in

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*On page 33, for "Vol. 91 No. 12" read "Vol. 91 No. 2".

Madagascar. Possibly *typica* and *newtoni* are of Asiatic origin, but have been long isolated. They are very distinct from *Coracina cinerea* (Müller) of Madagascar and the Comoros. Both show very well marked sexual colour-differences. Actually on the underside the female of *typica* shows a strong resemblance to that of *C. schisticeps* (Gray) of New Guinea, and likewise *newtoni* to another far eastern species, *C. tenuirostris* (Jardine), but this is presumably mere convergence. Berlioz suggests that *Coquus* bears some resemblance to the Asiatic genus *Lalage*, but I have not found any species to which *typica* or *newtoni* is particularly similar. Peters & Mayr (in *Check List of the birds of the world* 9, 1960) place *typica* and *newtoni* in *Coracina*. I see no reason to differ, though it is impossible to suggest their precise ancestry. To be sure, they are closely related to each other, though the differences (especially in the females) are such that they are best regarded as distinct species.

These differences were described by Pollen (1866), whose paper is accompanied by two good coloured plates, illustrating both sexes of the two species and the juvenile of *typica*. Nevertheless a fresh comparison, with some further detail, especially measurements, is appropriate. To this end, in addition to the material in London, Paris and Cambridge, Dr. G. F. Mees has most kindly provided measurements of that in the Rijksmuseum van Natuurlijke Historie, Leiden, consisting of one male and two females of *typica*, and three males and five females of *newtoni*. Males of the two species are very similar in colour of plumage, though *newtoni* is a paler grey above. In both the outer webs of the secondaries are narrowly tipped and margined with white, but this is more pronounced in *typica*. Some specimens of *typica* have some rufous on the upperside, and one in Cambridge also has a band of rufous across the chest, and some rufous on the abdomen. This may be a sign of immaturity. Females are much more distinct, especially on the underside. Above, both are rufous brown, though *newtoni* is usually paler, and has a rather ill defined white superciliary, practically lacking in *typica*, and well pronounced white tips and margins to the outer webs of the secondaries, much less apparent in *typica* (this latter difference is the opposite to that in males). *Newtoni* also has the rump and upper tail-coverts barred with dusky, whereas *typica* is markedly reddish in this area, and unbarred. Below, the differences are striking. *Newtoni* is white narrowly barred with dusky, the bars only reduced or absent on the centre of the abdomen and the under tail-coverts; whereas *typica* is an immaculate rich ferruginous, with the chin white. The tips to the outer rectrices are white in *newtoni*, but white tinged tawny in *typica*.

There is an unsexed juvenile of *typica* in Cambridge, collected by E. Newton at Vacoa, Mauritius, on 31st December 1860. It is the subject of an editorial foot-note to Pollen (1866), and is illustrated in the same paper. It is similar to the adult female of *typica* above, but each feather is tipped with light fawn giving a barred appearance. It is white below, the chest tinged fawn, each feather having a dusky mesial streak, only almost lacking on the centre of the throat.

Measurements are given in Table 3. The wing-lengths indicate that *typica* is the larger species. The tail-lengths show much variability. They were all most carefully taken, and are considered a true reflection. Considering the overall figures, the tail-lengths are about the same, but the tail/wing ratio is appreciably higher in *newtoni*. A difference in the bill size is immediately apparent to the eye, and *typica* has the higher bill/wing ratio. For what is presumably the ecological counterpart, *Coracina cinerea*, Benson (1960a: 200) gives the ratio as 19.0 in Madagascar, and in the Comoros as 20.7 on Moheli and 21.1 on Grand Comoro. Thus *typica* gives the highest ratio of all, but *newtoni* is little higher than *cinerea* in Madagascar.

A few words are necessary about type-material of *C. newtoni*. In accordance with the custom of that time, Pollen (1866) did not designate a type specimen. Nor did he state what material he had available. His paper is concluded with a date 17th February 1865. But as reference is made at the start to a notice in *Ibis*, 1865: 530 (i.e. the number for October 1865) of an earlier paper, it appears that there has been a misprint, and that the date should read 17th February 1866 (*newtoni* was described in the *Ibis* for July 1866, and this had been editorially predicted in the number for April 1866, p.224). In Leiden there are three males and four females of *newtoni* collected by Pollen and van Dam between January and May 1865; in London a male and a female collected by them in June 1865; likewise in Cambridge a male and a female in May 1865. These five males and six females should be regarded as syntypes. I am most grateful to Dr. Mees for his advice and assistance in this matter. The two Cambridge specimens should be added to the list of type material in *Bull. Brit. Orn. Cl.*, 1971: 4–6.

Table 3. Some measurements for *Coracina typica* and *newtoni*, in millimetres

	Wing	Tail	Culmen from base
		(1) *Coracina typica*	
♂♂	102, 104, 105, 106, 106, 106, 107, 107, 107, 108, 110	72, 74, 75, 75, 76, 77, 77, 77, 77, 80, 84	21.5, 21.5, 22, 22, 22.5, 22.5, 23, 23, 23.5
♀♀	107, 108, 108, 109, 109, 110, 110	73, 75, 78, 80, 90	22.5, 23, 23.5, 24, 24, 24.5
juv.	104	85	22
	Overall averages: 107.0	77.9	22.8
		(2) *Coracina newtoni*	
♂♂	93, 93, 97, 97, 98, 98, 101, 101, 101, 102	74, 74, 77, 77, 79, 81, 81, 81, 84	17.5, 18.5, 18.5, 19, 19, 19, 19.5, 19.5, 19.5, 20
♀♀	96, 96, 96, 97, 98, 98, 99, 99, 100, 101, 101, 102	73, 74, 74, 75, 75, 77, 79, 80, 81, 81, 87	17, 18, 19, 19, 19, 19.5, 20, 20, 21,
	Overall averages: 98.3	78.2	19.1

$\frac{100 \times \text{tail}}{\text{wing}}$: 72.8 for *C. typica*, 79.4 for *C. newtoni*

$\frac{100 \times \text{bill}}{\text{wing}}$: 21.3 for *C. typica*, 19.3 for *C. newtoni*

Brief reference may be made to the affinities of *C. cinerea*. Hall & Moreau (1970: 55) have suggested that it forms part of an Afro-Asiatic superspecies, but with *cinerea* and the Asiatic species unlike the African ones in having patterned tails. Indeed, in particular, the resemblance in colour and pattern as a whole between the males of the Malagasy and Grand Comoro forms of *C. cinerea*, and the male of *C. melanoptera sykesi* of India and Ceylon, is rather striking. Other examples of species found in Madagascar, of apparent Asiatic origin, are given by Berlioz (*Mém. Inst. Scient. Madagasc.* A, 1(2), 1948: 191), viz. in the genera *Ninox*, *Microscelis* (=*Hypsipetes*) and *Copsychus*.

Acknowledgement

I am grateful to P. G. H. Frost for reading this paper and drawing my attention to the paper by Selander (1966).

Summary

1. Some aspects of variation in the forms of Paradise Flycatcher *Terpsiphone* inhabiting islands in the western Indian Ocean are discussed. As with some species of other families, *T. mutata* is longer billed in the Comoros than Madagascar. This applies particularly to Anjouan, and is perhaps due to a lack of competitors, such as are more apparent on Grand Comoro. There is also a reduction in sexual dimorphism in colour and tail-length, except on Mayotte, the nearest of the Comoros to Madagascar. *T. bourbonnensis*, of the Mascarenes, is not particularly long-billed, but shows less sexual dimorphism than any form of *mutata*. Bill-length is proportionately no greater in *T. corvina* of the remote Seychelles than in some Comoro forms of *mutata*, and contrary to expectation sexual dimorphism is well marked. In all of these forms, not taking account of an extremely small sample of *T. b. bourbonnensis*, the bill/wing ratio is higher in the female than the male, the difference being greatest in *corvina* and least in *mutata* on Madagascar. The possible significance of this is not understood. Feathered nestlings of *T. bourbonnensis desolata* and *corvina* are described.

2. The differences between the Cuckoo Shrikes *Coracina typica* of Mauritius and *C. newtoni* of Réunion are described. Both are strongly sexually dimorphic in colour, and differences between the females of the two species are well marked. They may be of Asiatic origin, as is perhaps also *C. cinerea* of Madagascar and the Comoros, though *cinerea* does not appear particularly closely related to the Mascarene species. *C. typica* is the longest billed of the three species, while *newtoni* is little longer billed than *cinerea* in Madagascar and shorter billed than this species in the Comoros.

References:
Benson, C. W. 1960a. The birds of the Comoro Islands. *Ibis* 103b: 5–106.
— 1960b. Les origines de l'avifaune de l'Archipel des Comores. *Mem. Inst. Scient. Madagasc.* A, 14: 173–204.
Berlioz, J. 1946. *Oiseaux de la Reunion.* Paris: Larose.
Hall, B. P. & Moreau, R. E. 1970. *An Atlas of speciation in African passerine birds.* London: British Museum (Natural History).
Pollen, F. 1866. On the genus *Oxynotus* of Mauritius and Réunion. *Ibis* 8: 275–280.
Salomonsen, F. 1933. Les Gobe-mouches de Paradis de la Région Malgache. *Oiseau* 3: 603–614.
Selander, R. K. 1966. Sexual dimorphism and differential niche utilization in birds. *Condor* 68: 113–151.

Status of *Lorius amabilis* Stresemann

by Joseph M. Forshaw

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Two species of *Lorius* have been recorded from New Britain in the Bismarck Archipelago, New Guinea. *Lorius hypoinochrous* G. R. Gray is distributed from south-eastern New Guinea to the eastern Papuan Islands and the Bismarck Archipelago. The second species, *Lorius amabilis* Stresemann, is known only from the type, a female collected at Nakanai by P. Otto Meyer in August 1931. Peters (1937) lists this species without any comment, simply giving its range as New Britain.

In the course of working on New Guinea parrots I examined the type of *L. amabilis*. It was almost certainly a captive bird, because the primaries have been removed, a common practice among New Guinea people to prevent flight and to obtain feathers for head adornments. Direct comparison of the type with specimens of *L. hypoinochrous* confirmed the differences given by Stresemann (1931)—*amabilis* lacks a black cap, has only traces of the dark bands across the hindneck and mantle, has duller, more greenish lower underparts, and has yellowish-brown instead of dark grey legs and claws. However, the two birds are similar in general appearances; *amabilis* even has the white cere so characteristic of *hypoinochrous* and, although the new primaries are only emerging, there seems to be no difference in the underwing pattern. There are no differences in tail, bill and tarsus measurements.

	Tail	Exp. cul.	Tars.
L. amabilis (type only)	90 mm	25 mm	23 mm
L. hypoinochrous (8♀♀)	84–95(88.9)mm	23–27(25.3)mm	22–25(23.0)mm

This overall similarity suggests to me that *amabilis* may not be a valid species. If this is so there are two alternatives that must be considered; it could be the juvenile or an aberrant specimen of *hypoinochrous*.

We know from breeding in captivity that the young of two other black-capped species, *lory* and *domicellus*, have black caps when they leave the nest (Burgess 1921, Spence 1955), so it is unlikely that even very young *hypoinochrous* lack the black cap. Furthermore, the orange-red colouration of the bill, as given on the label of the *amabilis* type, agrees with the adult bill colouration common to the genus; juveniles have brownish bills. For these reasons I reject the possibility of *amabilis* being the juvenile of *hypoinochrous*.

In my opinion interruption to a possibly simple genetic factor controlling black pigmentation could bring about all the distinguishing features of *amabilis*. In fact, examination of the type specimen so strongly suggests this that I prefer to dismiss *amabilis* as a species until further specimens are obtained. Of course, I am not prepared to say that specimens will not be collected; neighbouring New Ireland has two species of *Lorius*, though the second, *L. albidinuchus* (Rothschild & Hartert), is very different from *hypoinochrous*.

I should also point out that in the genus there are two other species which do not have black caps. *L. garrulus* (Linné) has supporting distinguishing features, namely green thighs and a diagnostic underwing pattern; it is widespread through the Moluccas. *L. tibialis* Sclater is known only from the unique type, a female purchased in the Calcutta market about 1867 and presented to the London Zoo; the original description indicates an overall similarity to *L. domicellus* (see Sclater 1871).

Acknowledgement

I am grateful to Dr. G. Mauersberger of the Zoologisches Museum, Berlin, for the loan of the type of *Lorius amabilis*.

References:

Burgess, M. A. 1921. Breeding of Black-capped Lory. *Avic. Mag.* (3) 12: 116–118.

Peters, J. L. 1937. *Check-list of birds of the world.* 3. Cambridge, Mass.

Sclater, P. L. 1871. On two new or little-known parrots living in the Society's Gardens. *Proc. Zool. Soc. Lond.* (1870): 499.

Spence, T. 1955. Breeding of the Purple-capped Lory. *Avic. Mag.* 61: 14–17.

Streseman, E. 1931. *Lorius amabilis* species nova. *Orn. Monatsb.* 39: 182–183.

Paradise Whydahs *Vidua paradisaea* and *V. obtusa* of southern and eastern Africa, with notes on differentiation of the females

by Robert B. Payne

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In the southern half of Africa are two kinds of paradise whydahs. In one (*Vidua paradisaea*) the male has a long, tapering tail, and in the other (*V. obtusa*) it has a more broad, rounded, somewhat shorter tail. The whydahs are brood parasites and lay their eggs in the nests of the Melba Finch, *Pytilia melba*, and the Orange-winged Melba Finch, *P. afra*, respectively, and they mimic the songs of the foster species (Nicolai 1964, 1969). Although the whydahs live together in some areas without hybridizing, they have been regarded as conspecific (Friedmann 1960). Chapin (1922) at one time recognized that two species lived in southern Africa, but later he regarded the two as conspecific because no differences were known in their females (Chapin 1954: 579). After Nicolai's observations on vocal mimicry of the whydahs were published, the distribution of the whydahs and their *Pytilia* song models were mapped by Irwin & Benson (1967) and by Hall & Moreau (1970), showing that the distribution of *V. paradisaea* corresponds closely to the distribution of *P. melba* in relatively dry areas of southern and east Africa, and *V. obtusa* occurs within the range of *P. afra* in the more humid areas.

During a field study in 1965–68 in Africa my wife Karen and I collected paradise whydahs both in areas of allopatry and in areas where the two kinds occur together. By examining these specimens and others taken in the areas where only a single form of whydah and a single *Ptyilia* species occur, we could compare the morphological features of females of known identity. The local vegetation, ecology, and evidence for the occurrence of only a single species of whydah and of *Pytilia* are detailed below to document the basis of identification of the females, and notes on breeding condition and behaviour are included to confirm their breeding status. Specimens collected are now in the University of Michigan Museum of Zoology.

Bases for identification in areas of allopatry, with notes on distribution, ecology, and breeding

Marble Hall, Transvaal: Throughout the Transvaal *Pytilia melba* is common in brushy woodlands, but *P. afra* is restricted to the NE corner along the moist escarpment (McLachlan & Liversidge 1957). *Vidua paradisaea* lives in the same areas as *P. melba*, wheras *V. obtusa* has been reported only from the moist escarpment region. I saw adult males of *paradisaea* in 14 localities in northern and central Transvaal, and at Merensky Reserve (23°39′S, 30°40′E) I heard it mimic several vocalizations of *P. melba*, the only local pytilia. Male *paradisaea* also mimicked this finch near Marble Hall; the mimetic song was a "hee, yooweee". On a farm 21 mi. west of Marble Hall, 2100′ elevation on Springbok Flats (24°51′S, 28°58′E), *paradisaea* was abundant and I saw at least 30 males within two miles east and west from February to April, 1966; I collected two ♂♂ here. From 8th February to 8th March 1966, I collected 18 adult female Paradise Whydahs at the farm. All showed evidence of breeding and had either recognizable fresh post-ovulatory follicles or yolky ovarian follicles larger than 7 mm; ten ♀♀ had an egg in the oviduct. At the Lowvelt Fisheries Research Station (25°00′S, 29°19′E), 10 mi. east of Marble Hall, we spent three weeks during the summers of 1966 and 1967 and saw adult male *paradisaea* nearly every day and *P. melba* occasionally. No other paradise whydah or pytilia species were seen here, nor were they at Springbok Flats. On 6th March 1966 I collected a female whydah with a hard egg in the oviduct; it was shot from the same bush where I had photographed a male Acacia Paradise Whydah *V. paradisaea* at the fisheries. On distributional grounds it is clear that these Marble Hall area female whydahs all represent *V. paradisaea*, and they are so identified in Table 1.

Table I

Wing length of female paradise whydahs in southern and east Africa

Locality	No. specimens	Wing length, mm Max.	Min.	Mean	$t_{95}\, s_{\bar{x}}$
	Vidua paradisaea				
Marble Hall, Transvaal	18	79	73	76·11	·90
Sabi Valley, Rhodesia	3	76	74	75·0	—
Botswana	5	77	76	76·6	—
South-West Africa	3	77	75	76·0	—
Lilongwe, Malawi	2	74	74	74·0	—
Olorgesailie, Kenya	4	75	74	74·5	—
TOTAL	35	79	73	75·74	·53
	Vidua obtusa				
Tzaneen, Transvaal	1	—	—	79·	—
Mwinilunga, Zambia	11	84	77	79·73	1·62
Kasaji, Katanga	16	86	77	80·25	1·29
TOTAL	38	86	77	80·00	·94

Tzaneen, Traansval: At the moist base of the escarpment of the northeastern Transvaal (=five miles east of Tzaneen) *Pytilia afra* was seen on 11th February 1967, and *Vidua obtusa* males were seen here on the same orange farm of A. C. Raines (Payne 1967a; specimens of *obtusa* in NMR [Bulawayo] and UMMZ[Ann Arbor]). We also saw a male *obtusa* one mile north of Letsitele on 24th June 1967, about six miles from the earlier sightings. In two weeks of field work in 1966 and 1967 at Tzaneen I saw no *P. melba* or *V. paradisaea*, and in January 1966, before I had seen any whydahs at Tzaneen, Archie Van Reenen, who had an orange farm 4 mi. east of Tzaneen, told me that the local whydahs looked like the "Broad-tailed Paradise Whydahs" (*V. obtusa*) illustrated in McLachlan & Liversidge (1957: 451). Because *V. obtusa* males are the only form known at Tzaneen and because the female whydah taken there was with a breeding male, I call the Tzaneen female *obtusa* in Table 1.

Botswana: Both *Pytilia melba* and *Vidua paradisaea* are widespread in northern Botswana (Smithers 1964). *P. afra* is apparently unknown, and a single specimen of a male *V. obtusa* was taken from Panda-ma-Tenga, on the Rhodesian border in extreme northeastern Ngamiland. I saw male *V. paradisaea* in breeding plumage at six localities in central and western Ngamiland and *P. melba* at three of these in April 1967. A ♀ that I shot from a flock of six *V. paradisaea* 6 mi. S Shorobe on 21st April had recently begun the postnuptial moult (some head and breast feathers were growing); it had probably bred here as its ovary had not fully regressed, and the largest ovarian follicle was 1·5 mm and the convoluted oviduct was still somewhat enlarged. I also saw *P. melba* here on the same day. Female whydahs included in Table 1 as *V. paradisaea* were from Francistown 3700′ (NMR 2), "Kalahari 3200′" (MRAC [Tervuren] 1), Shorobe 5 mi. SW (UMMZ 1), and Swartruggens (FMNH [Chicago] 1).

South-West Africa: In this dry country *Pytilia melba* is widespread but *P. afra* is unknown (McLachlan & Liversidge 1957; Immelmann *et al.* 1965). Similarly adult ♂♂ *Vidua paradisaea* have been taken in South-West Africa near Kamerjab at 4000′ (BM[NH]) and in "Ovampoland" (Berlin Museum) but *V. obtusa* is unknown. The country is dry and it would be surprising to find the wetter-country finches here. On the basis of the semi-arid habitat I include in Table 1 as *V. paradisaea* three females in the Berlin Museum taken by W. Hoesch from Erongo Plateau; these are the only ♀♀ paradise whydahs known to me from this country. They were taken during August and September 1937; the only one with breeding condition information had a small ovary on 5th September.

Sabi Valley, Rhodesia: The river bottom land along the Sabi River at 1400′ on the Sabi Valley Experimental Station (20°20′S, 32°18′E) is hot and dry; mean annual rainfall is about 16 inches (I. MacFadyen, pers. comm.). Dominant vegetation is acacia (mostly *Acacia tortilis*) and mopane (*Colophospermum mopane*) open woodland with a rich grass cover. The rather dry nature of this palce is indicated by baobabs (*Adansonia*) though south of the station are seasonally flooded pans. In a list of the birds of this area, Brooke & Cackett (1965) note that *Pytilia melba* occurs but *P. afra* does not; they report that *Vidua paradisaea* is an "irregular visitor" and *V. obtusa* is "rare". I saw *P. melba* several times but no *P. afra*. Between 12 mi. N and 2 mi. S of the station I saw at least 22 adult ♂♂ *paradisaea* in breeding plumage from 3rd to 9th March 1967 and more from 4th to 6th April 1967. Several were heard to mimic the songs of *P. melba*. I collected six adult ♂♂ including two that looked at first like *obtusa* because they lacked the elongated second pair of rectrices, but both were identified in the field before they were taken as *paradisaea* on the basis of the pale yellowish nape (not dark orangish as in ♂♂ *obtusa*). The one bird with an intact first pair of rectrices (these are about half the length of the second pair and are slightly rounded) looks somewhat like the shorter-tailed ♂♂ *obtusa* in their full breeding plumage. I saw no *V. obtusa* on the alluvial plains but did on the Chipinga road on the escarpment at 3000′ (20°07′S, 32°38′E), a mile above Buffels Drift. The three female whydahs I shot at the Sabi Valley station all had yolky ovaries. One had two large post-ovulatory follicles (4·1, 1·9 mm) and an egg in the oviduct, and the other had two large (3·8, 2·5 mm) post-ovulatory follicles. As these females were all breeding at Sabi Valley they are regarded as *V. paradisaea.*

Lilongwe, Malawi: At 3600′ by Mbabzi village (13°56′S, 33°40′E), about 8 mi. NW Lilongwe, I saw six adult male *Vidua paradisaea* and also one *Pytilia melba* during a short visit from 26th to 28th March 1967. No *V. obtusa* or *P. afra* were seen. In spite of the widespread occurrence and sympatry of both kinds of whydahs and both pytilias in Malawi, I am including two female whydahs taken at Mbabzi as probably *V. paradisaea*, because if *obtusa* had been there in numbers as great as *paradisaea* I would expect to have seen it. In addition, D. N. Mansfield, in an unpublished manuscript written several years ago and deposited in the *Ostrich* editorial office at the Percy FitzPatrick Institute, found *V. paradisaea* common but *V. obtusa* absent at Lilongwe. Mansfield lived in Lilongwe for many years and knew the local birds very well. One of the female whydahs I collected was taken on 26th March and was not laying, and the other (27th March) had an unshelled egg in the oviduct and three fresh post-ovulatory follicles (3·8, 1·9, 1·5 mm; confirmed by serial histological sections) and was breeding. According to Mansfield (in manuscript and in letter), the host of this whydah at Lilongwe is *P. melba*, which nests there from February, through June.

Mwinilunga, Zambia: The Mwinilunga District in Zambia has been well studied in the past 15 years by several ornithologists (Benson & Irwin 1967: xi). All pytilia specimens known from there are *P. afra;* specimens that I have seen were collected from Salujinga, Zambezi Rapids, Kalene Hill, Mundwiji Plain, Sakeji, Lisombo Stream, Mbongo Stream, and Mwinilunga. *P. melba* was reported for Mwinilunga by White (1946: 220), but Benson & Irwin consider this record questionable as no specimens are known. The ♂♂ whydahs known from Mwinilunga District are all *obtusa;* specimens examined were from Zambezi Rapids and Salujinga.

From 2nd to 19th September 1966, we camped for two weeks at Salijunga (10°58'S, 24°07'E) in the northern tip of northwestern Zambia. Although it was late in the dry season and no rains had fallen, green grass was emerging from ground burned over a few weeks earlier, and many deciduous trees were flowering and leafing. Here and at Zambezi Rapids (11°08'S, 24°10'E) *Pytilia afra* was common. An adult male taken on 15th September had large testes (about 4 × 2·5 mm) and was beginning moult of the primaries; although it was in adult plumage it had anterior frontal regions of the skull still unpneumatized. At Zambezi Rapids I shot 8 *P. afra;* one adult ♂ on 7th September was not moulting and had testes 4 × 3 mm, and its skull was partly unpneumatized. Three other ♂♂ taken on 13th to 18th September were moulting and had small testes (1·5 to 2 mm long) and fully pneumatized skulls, suggesting that younger birds bred later in the season than older birds. An adult ♀ on 13th September was in moult and had a small ovary; the other three birds were young in post juvenal moult and had small ovaries. Most of the *Pytilia* were found in flocks, but the larges testes of two ♂♂ suggested breeding. I saw a family group of two adult and three juvenile *P. afra* and a juvenile paradise whydah (presumably *V. obtusa*) in a bush on the bank of the river on 17th September. The young whydah begged and twisted its neck round so that it was begging with its head upside down and it gaped upwards, in a posture like that shown by Nicolai (1964: 176) for other young whydahs. The juvenile whydah at Zambezi Rapids was gray and unstreaked but lacked any red on the rump and it looked larger than the young *Pytilia*. This is an unusually late breeding record for *P. afra;* of the 17 breeding records for Zambia and Malawi listed by Benson *et al.* (1964: 101) and by Benson & Irwin (1967: 116) all were between January and July.

Paradise whydahs at Salujinga and Zambezi Rapids in September were in flocks of 4 to 60 birds. They were shy and did not seem at first to be breeding as I saw no males in full breeding plumage. Of 14 birds collected, 7 (4♂♂, 3♀♀) were juveniles each with a bursa and in moult into sparrowy non-breeding plumage. One (RBP 4059) was moulting its juvenal body feathers while still growing the juvenal rectrices. An adult ♂ (RBP 4091) about half-way through postnuptial body moult on 17th September retained several dark maroon breast feathers and some dark nape feathers from the breeding plumage and could thus be identified directly as *V. obtusa*. The testes were slightly larger than 2 mm and were evidently regressing. This male gave a "wooeeee" call like I heard *P. afra* give at Zambezi Rapids. On 13th

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[The bursa, see above, according to D. S. Farner (in *Biology and Comparative Physiology of Birds*, ed. A. J. Marshall, 1960) is a structure in the cloaca of young birds. Farner writes (p. 442):- "There is typically in young birds at the junction of the large intestine and the cloaca a dorsal diverticulum, the *bursa of Fabricius*. Subsequently this diverticulum loses its lumen and becomes lymphoid in nature".

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September in a flock of 60 whydahs I saw a male *V. obtusa* in full breeding plumage except for the inner two pairs of rectrices, which were missing. Also collected were a moulting young ♂ (with no juvenal body feathers evident) and five ♀♀. One ♀ had the skull about half pneumatized and had an unconvoluted oviduct and evidently she had not bred; she was perhaps an older bird of the year, as nearly all adult female viduines that I have collected in the breeding season have had the oviducts convoluted, resulting from enlargement in laying. Another ♀ taken at Salujinga was more than halfway through moult with only the outer three primaries worn, and a ♀ at Zambezi Rapids had four old primaries. Two other female whydahs at Zambezi Rapids were in worn plumage and had not begun to moult. One (RBP 4073) on 13th September had a convoluted but regressing oviduct and had no ovarian follicles larger than 1 mm, and the other ♀ (RBP 4033) on 7th September was laying; she had an unshelled egg in the oviduct and another yolky follicle (damaged by shot) in the ovary. The date seemed late for a whydah to be parasitizing *Pytilia afra*, but as noted some *P. afra* were still in breeding condition here, and two local boys who stopped by our camp said they knew the bird (*P. afra*) and it was still breeding, though none of the nests that we found or that they brought in had eggs or young. The skull of the laying whydah was about 30 per cent unpneumatized, a well-pneumatized skull for this species.

The large flock of 60 whydahs was seen for several days feeding in a cleared, fallow field, where they were eating fallen grass seeds, and with the whydahs were several *P. afra;* these did not fly when the whydahs were flushed. We also noted that the juvenile viduines had apparently joined the older whydahs in a flock soon after they were independent. None of the Zambezi Rapids birds had more than a little subcutaneous or body fat, suggesting that they were nonmigratory.

Kasaji, Katanga: In southwestern Katanga as in almost all of the Congo south of the equatorial forest, *Pytilia afra* is the only member of its genus; *P. melba* is restricted to the extreme eastern border of the Congo (Chapin 1954: 511–512). Similarly in the whydahs *V. obtusa* males are known for much of the southern Congo including 20 specimens taken by Fisher at Kasaji, whereas *V. paradisaea* is known from few specimens and these were from the eastern border of the Congo. From the distribution of pytilias and whydahs in the southern Congo, I regard the Kasaji female whydahs as *obtusa*. They were taken in April, May, August, September, and October, and in the first three of these months adult male *obtusa* were taken here in breeding plumage.

Olorgesailie, Kenya: On a gravel ridge (01°33′S, 36°28′E) about 31 mi. NE Magadi and a half mile north of the National Historical Site of Olorgesailie (=Ololkisalie), where the dry climate has left intact hundreds of hand-axes of early man, is a grove of acacias, euphorbias, and other trees and arid-country shrubs. Water is scarce most of the year and the local Masai people visited a temporary water hole beside the road and flushed up scores of finches in May and June 1967, when we camped here. I photographed an adult male *Vidua paradisaea* and two *Pytilia melba* at the water hole and collected four female Paradise Whydahs on 11th to 14th June. Three ♀♀ had a soft egg in the oviduct, and the fourth was about to ovulate a large, yolky follicle and had two large post-ovulatory follicles that were confirmed histologically.

Comparison of female paradise whydahs

Female whydahs taken in localities where only a single kind of male occurs (as described above) are compared for wing length in Table 1. Female *Vidua obtusa* are longer winged, on the average, than female *V. paradisaea*, and although some overlap occurs the differences in mean wing length (measured in the unflattened manner) are significant ($p < \cdot 01$, *t*-test). All females in the sample with wing length 80 mm or more are *V. obtusa,* and all females with wings 76 mm or smaller are *V. paradisaea.* As 17 of the 30 *obtusa* females had wing lengths of 80 mm or more and 26 of the 35 *paradisaea* females were 76 mm or less, about two-thirds of the female whydahs can be distinguished by wing length alone. The amount of overlap in wing length among females is about the same as among males in breeding plumage taken in the same general areas (Chapin 1922).

No geographic variation in wing length among females of either species is evident in southern and east Africa. Females are like the males in being morphologically similar in southern and east Africa. The only differences apparent within a species in male specimens in breeding plumage examined are in the forms of the tail, expecially the innermost, partly concealed pair of display rectrices, but these differences seem to be due solely to the amount of wear and abrasion of the feathers. In the females the variations in plumage colour (buffy or gray) are most likely due to soiling by reddish or blackish dirt, respectively.

The plumage pattern is similar in female *paradisaea* and *obtusa.* The streaking pattern on the back, crown, and breast and the grayness or buffiness of the upperparts and underparts show no consistent differences between the two kinds of females. The two vertical blackish marks on each side of the head, by the ear, are somewhat more pronounced in most *paradisaea* than in most *obtusa* in my series (Fig. 1), but this varies considerably among specimens and some female *obtusa* (e.g. RBP 4090, from Salujinga) in fresh plumage are more distinctly marked than some worn *paradisaea* (e.g. RBP 4745, from Olorgesailie).

Bill colour in breeding female *obtusa* taken at Tzaneen and Zambezi Rapids was noted at the time of collection as pinkish-gray, gray, or blackish above, and pinkish, white-gray, or horn below. Breeding female *paradisaea,* on the other hand, had blackish or dark gray bills (usually these were paler on the undersides of the base of the lower mandible). The bill colour difference between these females was apparent in the field; the paler, sometimes pinkish-tinged bill of *obtusa* distinguishes the females of this species from the blackish-billed *paradisaea.* The bill colour difference persists in most museum specimens with *obtusa* females taken in breeding condition having uniformly paler bills than breeding *paradisaea* females (Fig. 1). The bill colours may undergo seasonal changes in the living birds, however. The female *paradisaea* taken at Shorobe, Botswana, in early postnuptial moult had the palest bill of all my *paradisaea* females, and also five female *paradisaea* imported from South Africa in my aviaries lose the dark bill pigment and become pale-billed during their moult but regain the dark colour soon after moult has been completed.

Foot colour of breeding female *obtusa* in my samples was light gray or gray, whereas in breeding female *paradisaea* foot colours were recorded as gray, dark gray, or brown. Perhaps in living birds the foot colours of these females may be different, but no differences are evident in foot colour of the dried museum specimens; all are a dark horn colour.

The iris is dark brown in both kinds of birds.

Comparison of first-year males and juveniles

Wing lengths of males taken in sparrowy plumage (presumably these are first-year males) during the breeding season in my field work were the same

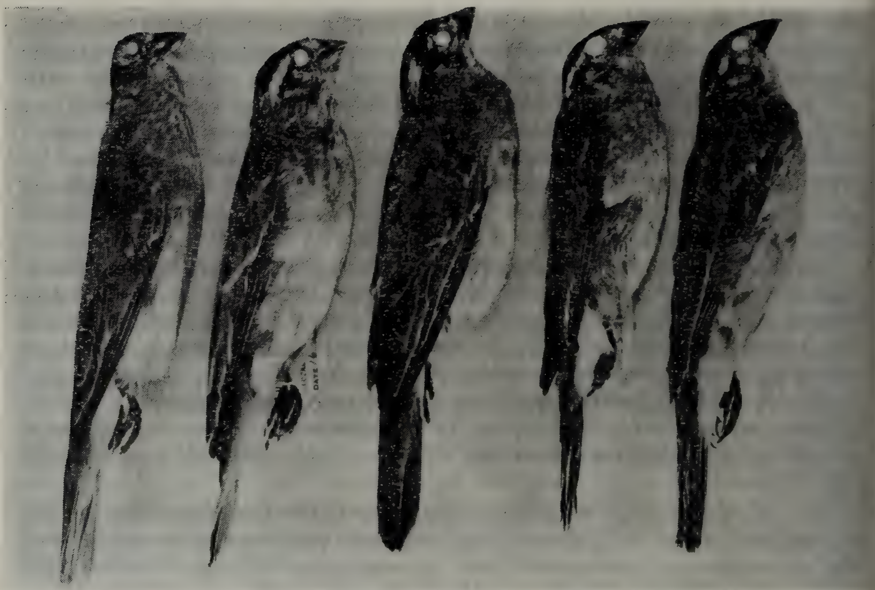

Fig. 1. Female paradise whydahs from southern, south-central, and east Africa.
From left to right: (a) 4386, *obtusa* from Tzaneen, Transvaal, (b) 4090, *obtusa* from Salujinga, Zambia, (c) 3976, *paradisaea* from Marble Hall, Transvaal, (d) 4476, *paradisaea* from Sabi Valley, Rhodesia, (e) 4748, *paradisaea* from Olorgesailie, Kenya. Note the darker bill and distinct head pattern in *paradisaea*.

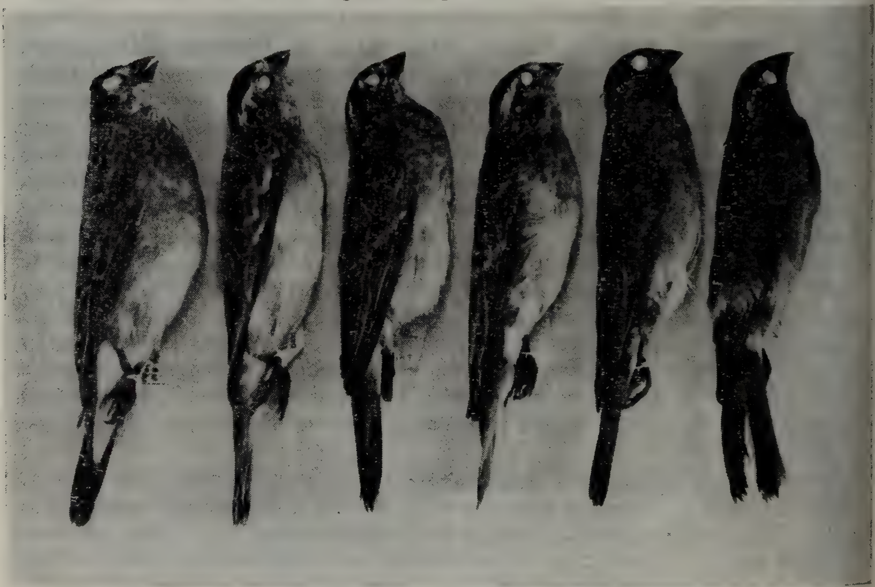

Fig. 2. Non-breeding males, females, and juveniles of *paradisaea* and *obtusa*.
From left to right: (a) male *paradisaea* (3974) from Marble Hall, Transvaal, (b) male *obtusa* (4075) from Zambezi Rapids, Zambia, (c) female *paradisaea* (3976) from Marble Hall, (d) female *obtusa* (4090) from Salujinga, Zambia, (e) juvenile *paradisaea* (4004) from Marble Hall, (f) juvenile *obtusa* (4034) from Zambezi Rapids, in early post-juvenal moult.

as in breeding males; on the average, in postjuvenal body moult male *obtusa* are larger in wing length (mean = 80·5 mm) than male *paradisaea* (mean of nine ♂♂ = 77·6 mm). Comparing the six Zambezi Rapids male *obtusa* in partial or complete non-breeding, sparrowy plumage with male *paradisaea* from Marble Hall (3 ♂♂), Merensky Reserve (1), Sabi Valley (4), and Olorgesailie (1) I can see no difference in the amount of striping, in back colour, or in any other plumage pattern (except for the greater extent of the dark chestnut or maroon feathers on the lower breast in *obtusa*, and perhaps in their lighter auricular pattern). Winterbottom (1939) compared eclipse plumage male *obtusa* from Katanga with *paradisaea* from farther south and found no differences. Bills and feet were black or blackish in my male *paradisaea* with partly enlarged testes but were horn or brownish in males taken during the breeding season but with smaller testes. The testis size in the nine sparrowy males available arrayed in sequence of increasing reddish colour in the breast feather and width of the black streaks on the upper breast shows (Table 2) that males with darker bills and feet and darker feathers on the breast, had larger testes. Probably reproductive hormone levels, which increase at the onset of the breeding season during the prenuptial moult, determine the amount of pigment deposited in the bill, feet, and plumage. Black pigment deposition in the growing feathers of *V. paradisaea* is known to be induced experimentally by adding minute amounts of pituitary luteinizing hormone (LH), and this pigmentation response is sometimes used in endocrinology laboratories as a routine bioassay for LH (Hall 1969). In males of *V. obtusa*, the bill colour of the males in eclipse plumage was pale in all except one male in partial breeding plumage, an adult male moulting into sparrowy plumage. Because the samples available of male *paradisaea* and *obtusa* in non-breeding plumage were taken at different stages of the breeding cycle, it is not possible to compare the bill colours of the two species. Adult males in breeding plumage have black bills and blackish or dark brown feet in both species.

Table 2

Correlation of gonadal activity and seasonal sexual characters in first-year male *Vidua paradisaea*

Locality	Field No.	Date	Wing length (mm)	Testis l. (mm)	Bill	Feet	% Skull pneumatized	Notes on plumage, other *
Merensky, Tvl.	4001	28th Mar. 66	78	1·0	gray	pale	90	A (large bursa)
Sabi Valley, Rho.	4480	5th Mar. 67	77	1·0	brownish-black above, pinkish-brown below	brown	70	A
Marble Hall, Tvl.	3921	10th Feb. 66	78	1·0	(like 4480)	pale	80	A
Marble Hall, Tvl.	3928	10th Feb. 66	77	1·0	(like 4480)	pale	70	A
Marble Hall, Tvl.	3974	7th Mar. 66	78	2·0	black	dk. brown	80	A-B
Sabi Valley	4562	6th Apr. 67	76	2·2	black	slate	90	B
Sabi Valley	4560	6th Apr. 67	77	2·3	black	slate	90	B-C
Olorgesailie, Kenya	4758	14th June 67	79	3·8	black	slate	70	C
Sabi Valley	4569	7th Apr. 67	79	5·0	black	slate	40	C

*Plumage categories—A: black streaks on upper breast slightly darker than female, most under 1·2 mm wide. B: black streaks on upper breast distinct, heavy, many 2·0 mm wide. C: Like B, but many upper breast feathers chestnut; some birds with black feathers on chin.

Male paradise whydahs in non-breeding plumage are usually distinguishable from females in the field by plumage. The black crown stripes and face marks of the males are broader and more distinct than in females, the pale head markings of the males are whiter (less buffy), and the blackish streaks on the upper breast are wider and more distinct (Fig. 2). In addition, some sparrowy males have dark feathers in the same area of the breast as the black and maroon or chestnut feathers of the breeding males. This field method of sex identification for sparrowy-plumaged whydahs proved correct in all cases where the sexed bird was subsequently collected and sexed by dissection. The sparrowy males in Fig. 2 were chosen for their lack of dark underparts; their streaking is only slightly more distinct than in the females.

Juvenile *paradisaea* and *obtusa* are similar; both are unstreaked brownish-gray, unlike the adult females. The lack of streaking is thought to be mimetic as the young whydahs match their *Pytilia* foster young in appearance and grow up with them in the nest (Nicolai 1964, 1969; Payne 1967b). Too few specimens are available for comparison of any significant mean differences in wing length of juveniles; in plumage they appear nearly identical (Fig. 2). The *V. obtusa* juvenile in Fig. 2 had begun its post juvenal moult and is thus partly in streaked plumage. whereas the juvenile *paradisaea* had not started moult and was in the unstreaked juvenal plumage.

Comparison with west African whydahs

Few specimens of female whydahs are available from west Africa, and for the forms *togoensis* and *interjecta* no females are known. West African females from the ranges of *aucupum* and *orientalis* are similar in size and plumage pattern to *paradisaea* females from southern Africa; some west African and Sudan specimens appear paler. Bill colour in all specimens examined is brown; no black bills were apparent in a series of eight females from Sudan even though some were taken in months when males were in breeding plumage.

On two occasions I saw a male *interjecta* court a female whydah at Zaria, Nigeria, in August 1968, and both females had pale bills. Neither were collected, and when I shot a lone sparrowy whydah on 3rd September here, the bird proved to be a male (RBP 4958). The bill was orange-yellow, the culmen was blackish, and the feet were flesh-grey. Plumage pattern was similar to that of the southern African non-breeding male whydahs. Inasmuch as *V. interjecta* was the only paradise whydah and *Pytilia phoenicoptera* the only pytilia seen at Zaria, this male was an *interjecta*.

Species of the paradise whydahs

Taken together, the morphological differences in both males and females and the behavioural difference between the males as described by Nicolai (1964, 1969) clearly establish the paradise whydahs *V. paradisaea* and *V. obtusa* as two distinct species.

The form *obtusa* has been placed in recent works as a subspecies of "*V. orientalis*" (McLachlan & Liversidge 1957; White 1963; Traylor 1968), but in fact these two forms appear to represent two different species, and *orientalis* is best regarded as a subspecies of *V. paradisaea*. Breeding males of the form *orientalis*, which meets *paradisaea* in Ethiopia and appears to interbreed with it, forming birds of intermediate character (Payne, unpublished), are similar to southern *paradisaea* in their pale nape colour and in wing length; they are more like *obtusa* in the rounded form of the rectrices. The distribution of the northern form *orientalis* and its west African counterpart, *aucupum*, matches closely with that of *Pytilia melba* (the red-lored races) just as southern *paradisaea* lives with the grey-lored races of *P. melba* (Hall & Moreau 1970); these two racial groups of the host species intergrade in north-eastern Africa (Wolters 1963). Thus *orientalis* uses the same host species as *paradisaea* does in its range and the two forms should be considered conspecific. *Obtusa*, on the other hand, mimics the songs and calls of another species of *Pytilia*. At least some of the viduines that mimic the songs of their hosts are known to select their mates on the basis of the mimetic songs (Payne, in press), and experimental studies of the selective responses of female whydahs to the songs of different kinds of *Pytilia* are now in progress to test the importance of song in mate and host selection in the paradise whydah complex as well. From both these morphological considerations and the songs of the males and the behavioral responses of the females, I suggest that *orientalis* and *aucupum* be regarded as subspecies of *Vidua paradisaea*, the Acacia Paradise Whydah. *Vidua obtusa*, the Broad-tailed Paradise Whydah, is best regarded as a distinct species.

Finally, the long, narrow-tailed forms of whydahs *interjecta* and *togoensis* of west Africa should be regarded as specifically distinct from all of the others, as they occur across thousands of miles in close proximity to the forms *orientalis* and *aucupum* but do not interbreed with them, and they mimic yet another species of pytilia in their song (Nicolai 1964). The forms *interjecta* and *togoensis* replace one another from east to west through the Guinea Woodland region, whereas their song models *Pytilia phoenicoptera* and *P. hypogrammica*, which have identical vocalizations according to Nicolai (1964), replace one another across a moisture gradient north to south. At Zaria and 68 miles northeast of Numan, Nigeria, I have heard male *interjecta* mimicking the only local pytilia, *P. phoenicoptera*. As *interjecta* was described earlier than *togoensis*, the species name of these whydahs is *Vidua interjecta*. These may be called the Exclamatory Paradise Whydahs; in flight the males with their long, slender tails look like airborne exclamations!

Acknowledgments

Specimens from the following museums were examined: American Museum of Natural History, Academy of Natural Sciences of Philadelphia, Berlin Museum, British Museum (Natural History), Field Museum of Natural History, National Museum of Kenya, Livingstone Museum, Museum Royal de l'Afrique Centrale, and National Museum of Rhodesia. I am grateful to the curators of these museums for making available their collections. Field work was supported by the National Science Foundation while I was with the Percy FitzPatrick Institute of African Ornithology. For their suggestions and help during the field work I thank D. H. Eccles, L. Ferguson, M. P. Stuart Irwin, G. L. Lombard, D. Mansfield, I. MacFadyen, A. C. Raines, J. C. Ras, G. T. Roux, M. Slogrove, R. H. N. Smithers, A. Van Reenen, and J. M. Winterbottom.

References:

Benson, C. W., Brooke, R. K. & Vernon, C. J. 1964. Bird breeding data for the Rhodesias and Nyasaland. *Occ. Pap. Nat. Mus. S. Rhodesia* 27B: 30–105.

Benson, C. W. & Irwin, M. P. Stuart. 1967. *A contribution to the Ornithology of Zambia* London: Oxford Univ. Press.

Brooke, R. K. & Cackett, K. E. 1965. Preliminary list of the birds of the central Sabi Valley, Rhodesia. *South Afr. Avifauna Ser.* 31: 1–34.

Chapin, J. P. 1922. The species and geographic races of *Steganura*. *Amer. Mus. Novit.* 43: 1–12.

— 1954. The birds of the Belgian Congo. Part 4. *Amer. Mus. Nat. Hist. Bull.* 75B.

Friedmann, H. 1960. The parasitic weaverbirds. *U. S. Nat. Mus. Bull.* 223.

Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation in African Passerine Birds.* London: Trustees of the British Museum (Natural History).

Hall, P. F. 1969. Hormonal control of melanin synthesis in birds. *General and Comparative Endocrinology*, suppl. 2: 451–458.

Immelmann, K., Steinbacher, J. & Wolters, H. E. 1965. *Prachtfinken, I. Astrilde.* Aachen: Verlag Hans Limberg.

Irwin, M. P. Stuart & Benson, C. W. 1967. Notes on the birds of Zambia: Part IV. *Arnoldia* (*Rhodesia*) 3(8).

McLachlan, G. R. & Liversidge, R. 1957. *Roberts Birds of South Africa.* Cape Town: Trustees of the South African Bird Book Fund.
Nicolai, J. 1964. Der Brutparasitismus der Viduinae als ethologisches Problem. *Z. Tierpsychol.* 21: 129–204.
— 1969. Beobachtungen an Paradieswitwen (*Steganura paradisaea* L., *Steganura obtusa* Chapin) und der Strohwitwe (*Tetraenura fischeri* Reichenow) in Ostafrika. *J. Orn.* 110: 421–447.
Payne, R. B. 1967a. *Vidua obtusa* in the Transvaal, South Africa. *Bull. Brit. Orn. Cl.* 87: 93–95.
— 1967b. Interspecific communication signals in parasitic birds. *Amer. Nat.* 101: 363–376.
— in press. Behavior, mimetic songs and song dialects, and relationships in the parasitic indigobirds (*Vidua*) of Africa. *Orn. Monogr.*
Smithers, R. H. N. 1964. *A Check List of the birds of the Bechuanaland Protectorate and the Caprivi Strip.* Cambridge: Trustees of the National Museums of Southern Rhodesia.
Traylor, M. A. 1968. Family Ploceidae, subfamily viduinae. In: *Check-list of Birds of the World*, Vol. 14. Ed. R. A. Paynter, Jr. Cambridge, Mass.: Mus. Comp. Zool. Harv.
White, C. M. N. 1946. The ornithology of the Kaonde-Lunda Province, Northern Rhodesia. Part IV. *Ibis* 88: 206–224.
Winterbottom, J. M. 1939. A note on the paradise whydahs. *Ostrich* 10: 125–128.
Wolters, H. E. 1963. Zur Rassengliederung von *Pytilia melba* (L). *J. Orn.* 104: 185–190.

Taxonomic and distributional notes on the African Chaeturini

by R. K. Brooke

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White (1965) following Lack (1956) placed all the African Spine-tailed swifts in *Chaetura* Stephens 1826. This is a purely new world genus as I have recently shown (Brooke 1970) and the African spine-tails, being relicts of a pre-pleistocene fauna, should be divided among several genera: *Neafrapus* Mathews 1918, *Rhaphidura* Oates 1883, *Telacanthura* Mathews 1918 and *Zoonavena* Mathews 1918. While holding a Frank M. Chapman memorial grant from the American Museum of Natural History in New York I examined many spinetails in the museums listed in Brooke (1969a) to whose authorities I am much obliged for facilities for study. I am also obliged to Dr. A. A. da Rosa Pinto for facilities for study at the Instituto de Investigacao Cientificia de Angola at Sa da Bandeira; to C. W. Benson for data on *Rhaphidura sabini* in the British Museum (Natural History) in London; to P. A. Clancey for the loan of material in the Durban Museum; to A. D. Forbes-Watson for the loan of some of his Mt. Nimba specimens. English names are discussed in Brooke (in press). Nothing is said of *Telacanthura* since my friend, the late Dr. A. De Roo, may have completed his comments on *T. ussheri* (Sharpe) for posthumous publication.

Age and sex dimorphism hardly exists in the Chaeturini. The only way to tell a juvenile specimen is when it is in sufficiently fresh plumage for the pale tips of the three outermost primaries not to have abraded (Brooke 1969b). There is no present evidence that juveniles are mensurally smaller than adults. Sight records have been used where they markedly fill out the range known from specimens bearing in mind that the old world Chaeturini are among the more readily identifiable swifts in the field.

Zoonavena grandidieri grandidieri (Verreaux)

The Brown Spinetail of Madagascar is the only spinetail with a forked tail. The depth (distance between the ends of the webs of the innermost and outermost rectrices with the tail held closed) is 1·5–5·0 av. (22) 3·23 mm. The two outermost rectrices are of equal length unlike the normal situation in fork-tailed Apodini. I have not seen material of *Z. g. mariae* (Benson) so do not know if it also has a forked tail. No weights are known for this species.

[A male and two females of *Z. g. mariae* in the British Museum (Natural History) all have a fork depth of 3 mm.—Ed.]

Rhaphidura sabini (Gray)

Sabine's Spinetail is probably continuously distributed throughout the forest country of west Africa in view of the Ghanian sight records given by Bannerman (1951) and Sutton (1965).

The figures for wing lengths are broken down into eastern (Congo Kinshasa and Uganda) and western (Sierra Leone to Gaboon) birds as well as by sex:—

A. Congo Kinshasa and Uganda ♂♂ 113–124 av. (22) 118·4, ♀♀ 116–126 av. (18) 120·5 mm.

B. Sierra Leone to Gaboon ♂♂ 118–125 av. (19) 122·2, ♀♀ 116–126 av. (15) 121·5 mm.

It appears that eastern males are smaller than their western counterparts but that there is no similar variation in females. Analogous variation in the males only also occurs in *Neafrapus boehmi* below. The Fernando Po birds were not included in the above figures: they range from 116–129 av. (9) 121·6 mm: the largest bird is a female. The overall range and average is 113–132 av. (86) 119·2 mm.

R. s. ogowensis (Neumann) 1908: Ogowe River in Gaboon was proposed on the grounds that it was smaller than the type of *R. sabini* from Sierra Leone. Bannerman (1933) pointed out that the other Sierra Leone birds were the same size as *ogowensis* but gave no figures. C. W. Benson (in litt.) advises that the type in the B.M.N.H. has a wing of 132 mm but that other material from Sierra Leone measures 122 and 126 mm. In view of the figures given above under B, nearly all of which are from Gaboon, *ogowensis* is clearly untenable on size; no colour differences have ever been suggested and I found none. The species should be treated binomially, an opinion recently expressed by Friedmann & Williams (1970).

Some birds from Kakamega have been weighed: ♂♂ 4 at 16 g each ♀♀ 15–17 av. (5) 16 g. Britton (1970) gives an unsexed weight of 16 g. Average (10) 16 g. Two females from the opposite end of the range at Mt. Nimba weigh 19·7 and 19·5 g. It may be that western populations are heavier than eastern just as their males are longer winged.

A. D. Forbes-Watson kindly lent me two of his Mt. Nimba specimens for examination. The female taken on 26th March is normal but the female taken on 18th July is unlike any other specimen of *R. sabini* that I have examined: it is not a juvenile. The gloss on the dark parts above and below has largely disappeared leaving the throat and breast blackish brown and the upper parts blackish blue. The upper and under tail coverts do not extend far enough to cover the webs of the rectrices as they do in normal birds. The white feathers of the caudal end have dark shafts as usual but also narrow dark webs along the shafts: these are most marked on the upper tail coverts. The overall effect is a much duller bird than usual. Despite the dark webs along the shafts of the white feathers which is a character of *Zoonavena*, it lacks the dark tail coverts which are a character of that genus.

Neafrapus boehmi (Schalow)

Brooke (1966) reviewed the Bat-like Spinetail and showed that *N. b. sheppardi* (Roberts) was recognizable in that the grey-brown of the breast came further down onto the abdomen than in the nominate race, that it was also a little paler in colour below, and had shorter wings than the nominate race on the interior plateaux where the type locality lies. *N. b. sheppardi* occurs along the east coast of Africa from southern Somalia to southern Mozambique and up the low lying river valleys. It intergrades with the nominate race in the Zambezi valley above the Victoria Falls north to Kabompo. The nominate race has a disjunct distribution, a longer winged, heavy form on the plateaux of Tanzania, Zambia and southern Congo Kinshasa and a shorter winged, light form on the coast of Angola below the escarpment. The name *Chaetura anchietae* Sousa 1887: Quissange is available for the Angolan population if it is thought desirable to separate them on the grounds of weight.

Wing lengths and weights range and average:—

N. b. boehmi in Angola ♂♂ 109–128 av. (22) 121·7 mm, 13–16 av. (7) 14·29 g; ♀♀ 120–131 av. (20) 125·6 mm, 13–16 av. (5) 14·60 g; overall 109–131 av. (49) 123·4 mm, 13–16 av. (19) 14·58 g.

N. b. boehmi on the central plateaux ♂♂ 122–135 av. (15) 125·7; ♀♀ 122–131 av. (9) 126·0, overall 122–135 av. (24) 125·8 mm.

The only weights available are of three unsexed birds from Zambia 18·0, 20·5, 22·3 g (Brooke 1966).

N. b. sheppardi ♂♂ 108–126 av. (22) 115·6 mm, 12·0–15·5 av. (5) 13·50 g; ♀♀ 111–124 av. (9) 116·8 mm, 13, 15 g; overall 108–126 av. (33) 116·1, 12·0–15·5 av. (7) 13·64 g.

It is only in the males that Angolan birds are shorter winged than the central plateau birds, a situation similar to that found in *R. sabini* above.

Neafrapus cassini (Sclater)

Like Sabine's Spinetail the Stumpy-tailed Spinetail probably occurs throughout the west African forest belt: *Sierra Leone:* Yambuya (Chapin 1939), *Liberia:* Mt. Nimba (C. W. Benson in litt. on A. D. Forbes-Watson's collection), *Ghana:* sight records from Kade (Sutton 1965), *Nigeria:* sight records from Awgu and Okigwi (Marchant 1942), from Kreagani (Serle 1957).

The range and average wing lengths are ♂♂ 146–165 av. (34) 155·8, ♀♀ 148–164 av. (23) 158·0, overall 146–165 av. (60) 156·7 mm. The sexual dimorphism, if real, is negligible. No weights have been recorded.

In some birds only the throat is mottled and the breast is an even dark shade: these are mostly sexed as males whereas in others, mostly sexed as females, the mottling comes down onto the breast. Unless a considerable number of specimens have been mis-sexed, this character (plain or mottled breast) is not sex-linked, neither is it a function of abrasion.

There is no geographical variation in the material I have examined from the Cameroons to the Congo, and there are no grounds for recognizing *N. c. brevicauda* (Reichenow) 1911: Bipindi in the Cameroons as a subspecies. It may be that a series from Ghana to Guinea will be distinguishable, but this matter will have to wait until a series is collected.

References:

Bannerman, D. A. 1933. *The birds of tropical west Africa* III. London: Crown Agents for the Colonies.

— 1951. As above—vol. VIII.

Britton, P. L. 1970. Some non-passerine bird weights from east Africa. *Bull. Brit. Orn. Cl.* 90: 152–154.

Brooke, R. K. 1966. The Bat-like Spinetail *Chaetura boehmi* Schalow (Aves). *Arnoldia* (*Rhodesia*) 2 (29).

Brooke, R. K. 1969a. *Apus berliozi* Ripley, its races and siblings. *Bull. Brit. Orn. Cl.* 89: 11–16.
— 1969b. Age characters in swifts. *Bull. Brit. Orn. Cl.* 89: 78–81.
— 1970. Taxonomic and evolutionary notes on the subfamilies, tribes, genera and subgenera of the swifts. *Durban Mus. Novit.* IX (2) :13–24.
— in press. Breeding of swifts in ethiopian Africa and adjacent islands. *Ostrich* 42.
Chapin, J. P. 1939. The birds of the Belgian Congo II. *Bull. Amer. Mus. Nat. Hist.* 75.
Friedmann, H. & Williams, J. G. 1970. The birds of the Kalinzu Forest, southwestern Ankole, Uganda. *Contrib. Sci.* 195.
Lack, D. 1956. Spine-tailed swifts of the old world. *Bull. Brit. Orn. Cl.* 76: 72–73.
Marchant, S. 1942. Some birds of the Owerri Province, S. Nigeria. *Ibis* (14)6: 137–196.
Serle, W. 1957. A contribution to the ornithology of the eastern region of Nigeria. *Ibis* 99: 371–418.
Sutton, R. W. W. 1965. Notes on Ghanaian birds seen in 1964. *Ibis* 107: 251–253.
White, C. M. N. 1965. *A revised check list of African non-passerine birds.* Lusaka: Government Printer.

Notes on the habits and taxonomy of *Rhodospingus cruentus*

by Raymond A. Paynter, Jr.

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Monotypic *Rhodospingus cruentus* is endemic to the arid equatorial region of western Ecuador and of extreme northwestern Peru. Within this restricted area it exhibits seasonal movements, appearing in abundance in the coastal lowlands during the rainy season from January to June, when it breeds, and apparently retreating to slightly higher elevations during the dry season, although not entirely deserting either region at any time (Marchant 1958; 1959).

I observed the species on several occasions, from 11th to 13th October 1965, while 5 km south of Sabiango, Loja, Ecuador, at an altitude of 650 m. It was found either singly or in loose flocks of up to 10 individuals, usually feeding in the foliage of acacias but sometimes in tall grass in company with flocks of *Volatinia jacarina*. Of the seven specimens collected three were males, two females, and two of indeterminate sex. The males were in immature plumage; just one adult male was seen in the three days of observations. The males weighed 11·0, 11·2, and 11·5 g; the females 11·9 and 13·3 g. The only call heard was a soft "zip".

One specimen was preserved in fluid. Its stomach and well-developed crop contained ovate, flattened caryopsis seeds (2·5 × 1·0 × 0·7 mm) of an unidentified grass (Gramineae). The seeds in the crop had been ingested uncrushed. No grit was present anywhere in the alimentary tract and it is assumed that the fragmentation of the seeds which was noted in the ventriculus had occurred without the aid of abrasive material. Goodfellow (1901: 474) tentatively identified grass seeds in a specimen collected in October, but Marchant (1959; 1960) reported that the bird feeds on insects. Presumably Marchant's observations were made during the rainy season when he was studying reproduction. It is probable that the species, existing as it does in an area of seasonal extremes in rainfall, is capable of utilizing a wide variety of food. Its tongue (Fig. 1), which is slender and pointed, grooved in the centre, rolled on the edges at the apex, and equipped with a bifurcated frayed tip, suggests that the species may also be capable of feeding on nectar and possibly pollen.

The systematic position of *Rhodospingus cruentus* within the hierarchy of the nine-primaried oscines is uncertain. The species was named *Tiaris cruentus* by

Lesson (1844) and thus placed with the New World buntings and finches within the family Fringillidae. Although always associated with the emberizine finches, it obviously has been thought to be an odd emberizine, as evidenced by several generic shifts. It first was moved from *Tiaris* to *Lophospingus* by Bonaparte (1850), next to *Coryphospingus* by Sclater (1860), and finally put in the monotypic genus *Rhodospingus* which was erected by Sharpe (1888). However, no one seems to have questioned the species' familial (or subfamilial) affinities prior to my recent suggestion (Paynter 1970) that it might be a tanager (Thraupinae). That is probably because the bill of *R. cruentus* has an angulate commissure and this has usually been considered a fairly definitive "fringillid" character (e.g., Ridgway 1901). I am wary of using the bill as a diagnostic character at *any* taxonomic level. A sharply angulate bill appears to me to be mechanically more efficient in crushing hard foods than is a straight bill. This condition is, therefore, merely indicative of the food eaten rather than of ancestry. Although, admittedly, there are no clear-cut criteria for differentiating the various oscine families and subfamilies (see Storer 1969; Paynter & Storer 1970), I believe that *R. cruentus* more nearly resembles the birds currently treated as tanagers than those which are placed within the subfamily Emberizinae.

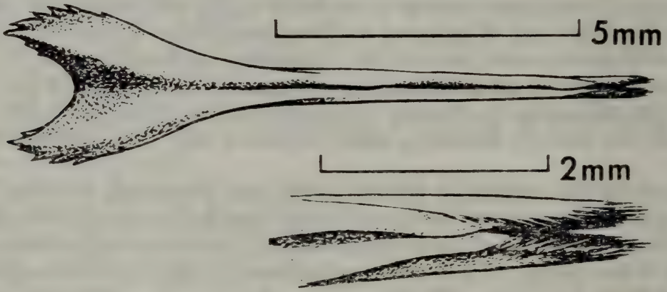

Figure 1. Tongue of *Rhodospingus cruentus*

Rhodospingus cruentus is sexually dimorphic in adult plumage. The female is brownish olive above, with a blackish olive tail and wings; below it is buffy on the throat and chest, turning more yellow on the abdomen. Similarly coloured birds are to be found throughout the oscine families. The adult male, on the other hand, is quite distinctive. It is black dorsally with an elongated, silky, partially concealed, vermilion crest, has a white patch at the base of the remiges, and has white axillaries; ventrally it is vermilion, shading to yellowish red on the lower abdomen.

Of the 275 species presently included within the Emberizinae, only seven other species have any red in their plumage. Two of these species, which constitute the genus *Coryphospingus*, have crown patches in the males which are quite similar structurally to that of the male of *Rhodospingus cruentus*. *Coryphospingus* may be closely related to *Rhodospingus*. I suspect it is, but I do not know. The remaining five species with red in their plumage are members of the genus *Paroaria*, but this genus is definitely remote from *Rhodospingus* and very possibly should not be treated as a member of the Emberizinae at all (see Paynter 1970: 212).

The type of crest found in *Rhodospingus* and the two species of *Coryphospingus* is found nowhere else within the Emberizinae. In fact, crests of any sort are rare in this large subfamily, occurring elsewhere (as elongated broad crown feathers rather than as partially concealed patches of silky feathers) only in *Lophospingus* (two species), *Charitospiza* (monotypic), and *Emberiza* (*E. variabilis*), as well as in the doubtfully emberizine genera *Paroaria* and *Melophus*.

On the other hand, within the Thraupinae red is a fairly common colour and crests similar to that of *Rhodospingus* are found in *Habia*, *Iridosornis*, *Tachyphonus*, and *Trichothraupis*. The genus *Tachyphonus*, a group of eight species in which the males are mainly black, though lacking forms with large areas of red, has five species with crown patches very similar to that in *Rhodospingus*. In addition, white axillaries as well as white bases to the remiges are found in seven of the eight species. The enumeration of similarities between the genera cannot be pushed much further. All species of *Tachyphonus* have tails which are proportionally longer than that of *Rhodospingus* and white or red lesser wing coverts and coloured rumps also occur several times, all of which lessen the similarity between the genera. In monotypic *Trichothraupis*, a taxon which could easily be considered congeneric with *Tachyphonus*, both sexes are brown and are not strikingly dimorphic, but the crown patch, white-based remiges, and white under-wing coverts are all found and, also as in *Rhodospingus*, the lesser wing coverts do not contrast with the rest of the wing. I am not prepared to claim a close relationship between *Rhodospingus* and *Tachyphonus* or *Trichothraupis*, although it is easy to hypothesize that *Rhodospingus cruentus* could have evolved from a population of either *Tachyphonus* or *Trichothraupis*, both of which are wet region genera, that became isolated to the west of the Andes. I do, however, wish to stress that *Rhodospingus* seems to fit more with the ill-defined group we treat as the Thraupinae than with the equally ill-defined subfamily Emberizinae.

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References:
Bonaparte, C. L. 1850–51. *Conspectus Generum Avium*. Vol. 1, 543 pp.
Goodfellow, W. 1901. Results of an ornithological journey through Colombia and Ecuador. Part II. *Ibis* (8)1: 458–480.
Lesson, R. P. 1844. Oiseaux nouveaux. *Rev. Zool.* (Paris) 7: 433–437.
Marchant, S. 1958. The birds of the Santa Elena Peninsula, s.w. Ecuador. *Ibis* 100: 349–387.
— 1959. The breeding season in s.w. Ecuador. *Ibis* 101: 140–152.
— 1960. The breeding of some s.w. Ecuador birds. *Ibis* 102: 349–382; 584–599.
Paynter, R. A., Jr. 1970. Emberizinae, pp. 3–214. In, R. A. Paynter, Jr., Ed., *Check-list of Birds of the World*, Vol. 13. Museum of Comparative Zoology, Cambridge, Massachusetts.
Paynter, R. A., Jr. & Storer, R. W. 1970. Introduction, pp. v-x. In, R. A. Paynter, Jr., Ed., *Check-list of Birds of the World*, Vol. 13. Museum of Comparative Zoology, Cambridge, Massachusetts.
Ridgway, R. 1901. The birds of North and Middle America. Part 1. *Bull. U.S. Nat'l. Mus.* 50: 1–715.
Sclater, P. L. 1860. List of Birds collected by Mr. Fraser at Babahoyo in Ecuador, with descriptions of new species. *Proc. Zool. Soc. London* 28: 272–290.
Sharpe, R. B. 1888. *Catalogue of Birds British Mus.* Vol. 12. London.
Storer, R. W. 1969. What is a tanager? *Living Bird* 8: 127–136.

Notes from coastal Eritrea on selected species

by Jeffery Boswall

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The following records were obtained during a visit to Eritrea, Ethiopia, from 22nd May to 15th June 1970. During this period, I was either in Massawa or among the islands of the Dahlak Archipelago.

Reef Heron *Egretta schistacea*

About 15 to 20 nests in the mangrove trees of Sheikh Said island on 30th May. One nest contained two blue eggs, others well-grown young.

European Spoonbill *Platalea leucorodia*

On 30th May 1970 Dr. Sigrun Klug and I discovered a colony of these birds nesting in the mangrove trees of Sheikh Said or Green Island, just off Massawa. About 20 pairs were nesting. One tree that I climbed had three nests, all with young. The first nest contained three young, one quarter-size, and two half-size; the second nest three young, one quarter-size, one-third size and one half-size; and the third nest two young, one quarter-size and one third-size. Adult spoonbills were seen feeding in the sea. The colony was loosely mixed with nests of the Reef Heron, see above.

It would appear from Smith (1957) that this bird has only been proved to breed in Eritrea on three previous occasions, though it is described as resident in island mangrove swamps.

Sooty Falcon *Falco concolor*

From 2nd to 8th June I was resident on a tiny island called Kundabilu off Entedebir, one of the Dahlak Islands. One or two Sooty Falcons were present each day. When two were present, the birds would dive at each other and engage in swift pursuits, as if they were courting. This would seem to be a little early since the species lays eggs locally in July or August (Clapham 1964). (When he visited this very island on 5th September 1962, Clapham found three pairs present). But, in the closely related species, Eleonora's Falcon, *Falco eleonorae*, which also nests late, from mid-July to October, birds return to their nesting grounds as early as April. In any case, as Moreau (1969) concluded from Ennion's January observations in Oman, "not all Sooty Falcons migrate . . .". This is further supported by a March record from the Dahlaks of Salvadori (1954) which Moreau overlooked, and further March records of Urban & Boswall (1969).

It may be worth drawing attention to some apparent small transcription errors in Clapham's paper. Von Heuglin (1859: 338) says "on the 30th of August I discovered four breeding pairs on a rock near the island of Dahlak el Kebir (15° N.L.) and found three nests, which were placed very artlessly on the rocky precipice. One contained three, the two others each two eggs". Clapham says these nests were found on Sarad, one of many islands that could be described as "near the island of Dahlak el Kebir"; he describes two nests as "30ft. up below rock over sea", and one as "cleft in middle of a cliff" and describes the contents as "1e/2y, 2y, and 1e/1y". Also, it seems much more likely that the year was 1858, not 1857. Clapham may have consulted other writings of von Heuglin but he quotes only one.

Black Kite *Milvus migrans*

On 30th and 31st May and 1st June I was able to make observations on the kites at Sheikh Said island off Massawa where this species is known to roost (Clapham 1964; Urban & Boswall 1969). The birds appeared to be present and active over the area of the highest mangroves throughout the day and I felt sure that when I came to examine that area in detail I would find them nesting. But no—they were merely using the tallest tree and one or two neighbouring ones for resting *during* the day. As one approached the highest tree, 35 or 40 kites would "burst" out of it. Perhaps, if there is no problem with the food supply locally, these birds "roost" by day to avoid the heat. At high tide, of course, the mangroves stand in water and at low tide there would be moisture in the mud that would evaporate and make the air immediately above cooler. I also noticed that, as the tide ebbed, some of the kites would fly down and perch on the wet areas recently uncovered. I watched carefully, but none of them foraged for food. They tended to stand quite still. It is interesting to speculate on whether coastal kites in very hot areas may keep cool by selecting these microclimates whereas those inland probably employ soaring for this purpose, as suggested by Harry Madsen, quoted by Schmidt-Nielsen (1964: 205). K. D. Smith has pointed out to me that nesting was not to be expected as the species breeds in the winter.

White-eyed Gull *Larus leucopthalmus*

About 80 birds were already in occupation of Kundabilu islet when we arrived on 2nd June. Two scrapes, each with one egg on 5th, had two on 6th. Doubtless others also were starting to lay among the impenetrable thickets of *Euphorbia*.

Feral Pigeon *Columba livia*

Smith (1957) does not include this species, and Mackworth-Praed & Grant (1957) avoid treating the free-living but domestic variety of this species. Nevertheless, it seems worth recording that in Massawa and Asmara the species is very well-established. The town pigeon of Addis Ababa is the endemic White-collared Dove *Columba albitorques* as discussed by Pitwell & Goodwin (1964) but even here the domestic *Columba livia* were a little commoner than these last two authors suggest. In particular, a small population of white ones seems to be established at the large church near the Menelik statue.

Acrocephalus sp.

Three or four Acrocephaline warblers were heard in song at the same place on three consecutive days, 30th May to 1st June, on Sheikh Said island. They could have been Clamorous Reed Warblers *A. stentoreus* (see Smith 1961).

Lesser Brown-necked Raven *Corvus corax edithae*

On several days in early June 1970 I saw up to 50 birds of this species together in the vicinity of the house of Signora Gabriella Solaro, at Massawa. The house is on the waterfront and belongs to the salt factory. The birds were superficially a little like Jackdaws *Corvus monedula* but were more 'rakish'. I had particularly close views on 12th June when I was mobbed by nine or ten adults as I climbed to a nest of the species in a tree in Signora Gabriella's garden. The nest contained two pulli a little more than half the size of the adults.

In mid-March 1969 Emil K. Urban and I had glimpsed a bird in another part of Massawa that I felt sure was an Indian House Crow *Corvus splendens*, hence Urban & Brown's (1971) reference to the possible occurrence of the Indian House Crow in Massawa. This reference must be ignored as the bird must have been *C. corax edithae*, which in January 1970 E. D. H. Johnson (pers. comm. 1971) positively identified in Massawa. Smith (1957) records this species no further north in Eritrea than Thio.

As to when this species might have arrived in Massawa, it is worth recording that Signora Solaro first noticed the bird in 1968, and is sure that it was not present—at least in the vicinity of her house—prior to then. She regards the birds as a noisy nuisance early in the morning and would certainly have remembered them! Also, she feels sure that, had they been common elsewhere in the vicinity, as they now are, she would have noticed them. It does thus seem likely that the bird is a recent arrival.

Summary

Notes on eight species on the mainland coast or on the islands of Eritrea, including a first probable observation and certain nesting of the Lesser Brown-necked Raven *Corvus corax edithae* as far north as Massawa in Eritrea.

References:

Clapham, C. S. 1964. The birds of the Dahlac Archipelago. *Ibis* 106: 376–388.

Heuglin, T. 1859. List of birds observed and collected during a voyage in the Red Sea. *Ibis* (1) 1: 337–352.

Mackworth-Praed, C. W. & Grant, C. H. B. 1957. *African Handbook of Birds*. Series 1. Vol. 1. Second Edition. London: Longmans, Green.

Moreau, R. E. 1969. The Sooty Falcon *Falco concolor* Temminck. *Bull. Brit. Orn. Cl.* 89: 62–67.

Pitwell, L. R. & Goodwin, D. 1964. Some observations on pigeons in Addis Ababa. *Bull. Brit. Orn. Cl.* 84: 41–45.

Salvadori, F. B. 1954. Spedizione subacquea italiana. Note Biologiche sugli uccelli delle Isole Dahlak. *Riv. Ital. Orn.* 24: 98–124.

Schmidt-Nielsen, K. 1964. *Desert Animals*. Oxford: Oxford University Press.

Smith, K. D. 1957. An annotated check-list of the birds of Eritrea. *Ibis* 99: 1–26, 307–337.

— 1961. On the Clamorous Reed Warbler *Acrocephalus stentoreus* (Hemprich & Ehrenberg) in Eritrea. *Bull. Brit. Orn. Cl.* 81: 28–29.

Urban, E. K. & Boswall, J. 1969. Bird Observations from the Dahlak Archipelago. *Bull. Brit. Orn. Cl.* 89: 121–129.

Urban, E. K. & Brown, L. H. 1971. *A Checklist of the Birds of Ethiopia*. Addis Ababa: Haile Sellassie I University Press.

Apalis flavida caniceps (Cassin) in Ethiopia

by C. Erard

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The "Black-breasted Apalis" *Apalis flavida* Strickland and the "Green-tailed Apalis" *A. caniceps* (Cassin) (see Mackworth-Praed & Grant 1955: 407–409) are currently considered conspecific (White 1962: 702; Hall & Moreau 1970: 181), although Grant & Mackworth-Praed (1941) have shown that it is possible to place the various forms in two groups: (A) *flavida*, characterised by a relatively long tail (42–62 mm), the rectrices (excepting the central pair) with broad yellow or whitish ends; (B) *caniceps*, characterised by a relatively short tail (31–55 mm), the rectrices (excepting the central pair) merely with yellow or whitish tips.

Up to the present, only the group (A) (*flavida*) has been known from Ethiopia. Neumann (1905: 78) described the race *malensis* on a specimen obtained in January near the River Schambala in the district of Male (ca. 5°30'N, 36°30'E.), south of Gemu-Gofa between the low valleys of the Omo and Sagan (see map B in Reichenow 1902). Slightly to the south of the type locality, in the area immediately to the north of Lakes Rudolf and Stefanie (altitude 650–900 m), Zaphiro collected five specimens in August for Macmillan (Ogilvie-Grant 1913: 610). Further north, south of Lake Shamo, the Childs Frick Expedition obtained one specimen on 15th April 1912 near Gardulla, at 5°38'N, 37°28'E. (Friedmann 1937: 177). Further west, on the opposite side of the Omo valley in the extreme south of Kaffa, a male was collected on 1st April 1940 at Uasha-Uaha, 5°50'N, 35°33'E. (Toschi 1959: 384). During his stay in Sidamo, Benson (1946: 195) collected nine specimens in July, August, October and November near Yavello, 4°57'N, 38°08'E, and two others in June and October near Arero, 4°48'N, 38°50'E (in both localities, altitude 1,300–1,500 m). All of these specimens have been attached to the race *malensis*, which extends into the extreme south-east of the Sudan

(Cave & Macdonald 1955: 297). I have examined a male from Loelli, 5°06′N, 34°41′E, in the British Museum (Natural History), and this seems to be the only evidence of the occurrence of *malensis* in the Sudan. The limits of the range of this race seem to be in north-eastern Uganda (Karamoja) and in northern Kenya at Lodermeru and north-west of Lake Baringo (Grant & Mackworth-Praed 1941: 43; Jackson & Sclater 1938: 1059).

During his travels, Erlanger (1905: 729) collected a female on 28th May 1900 at Âli Dera, Enia, in the province of Harrar, not far from Dire Daua, Ethiopia; seven males and two females between 23rd March and 8th April 1901 in the valley of the River Mana between Ginir and the confluence of the Mana with the Ganale Dorya in the province of Bale, Ethiopia; also two females on 19th and 25th May 1901 between El Uach and Bardera on the frontier of northern Kenya and Italian Somaliland. It is curious that neither Grant & Mackworth-Praed (1941) nor White (1962) took this material into consideration in defining the respective distributions of *malensis* and *viridiceps*. Only Hall & Moreau (1970: map 215) take count, in that they note that the populations of the dry north-east have the tail almost brown. It may also be mentioned that Zedlitz (1916: 90) assigns Erlanger's two Somalian specimens (the last two mentioned above) to *neumanni* (synonym of *viridiceps*), the remainder, from Ethiopia, to *malensis*. Erlanger assigned all his specimens to the race *malensis*, specifying that they were only distinguishable from Neumann's type in being a little darker ("etwas trüberen"), less yellowish on the upperside. He was probably correct as, after comparing 20 *malensis* with nine *viridiceps* in the British Museum, Benson (*in litt*) notes that quite clearly the latter has the same type of coloration as the former from which it seems only to differ in having the yellow of the chest paler; not so bright, less yellowish, above; and tips to rectrices more white, less yellow.

From the foregoing it will be evident that in Ethiopia, in the south of Kaffa, Gemu-Gofa, Sidamo, Bale and Harrar, there occurs a form of *Apalis flavida* which is long-tailed, with well marked yellow or whitish ends to the rectrices, and the crown green, grey being confined to the forehead. However, during the recent expedition of the Laboratoire d'Ornithologie du Muséum national d'Histoire naturelle de Paris to Ethiopia in 1968, the following specimens were collected in the north of Kaffa: one unsexed, 14th June, 12 km south-east of Agaro, at 7°50′N, 36°38′E, altitude 1,700 m; one female, ovary showing follicules of diameter 1 mm, 15th June, 15 km north of Dembi, at 8°08′N, 36°25′E, altitude 2,100 m. These specimens are remarkable for the uniform grey colour of the crown and sides of the head, the short and green tail, with narrow white fringes at the tips of the rectrices. They correspond with the diagnosis of *A. flavida caniceps* (Cassin). I had first compared these specimens with 2 ♂♂ in the Museum of Paris collected in February 1968 at Korhogo, Ivory Coast and 1 ♂ in the British Museum collected in April 1916 at Tambura, 5°38′N, 27°30′E, in the south-western Sudan (the only record of this form from that country; Cave & Macdonald 1955: 296), with which they agreed. Nevertheless I noted that they seemed to have the mantle more olive, less yellowish, and the bill clearly shorter and thinner. Benson has compared on my behalf my specimens with the series in the British Museum. He confirms that the two Ethiopian birds are obviously of the *caniceps* "type" but does not believe that they are subspecifically identical because unquestionably they are more olive, less yellowish above than other specimens (19 *caniceps* examined), the difference being particularly well marked comparing them with the two from the Ivory Coast, but can be discerned comparing them even with five birds from relatively nearby

Uganda; the bill is shorter and the yellow of the chest has a distinct olive tone, lacking in true *caniceps*.

The following table (measurements in millimetres), clearly illustrates their relatively short tail and bill-lengths:

		Wing	Tail	Tail/wing% (mean)	Bill (from base)
Apalis flavida caniceps					
West Africa	5 ♂♂	50–54 (51·8)	36–43 (39)	75·2	13–14 (13·3)
	3 ♀♀	49, 50, 51	31, 36, 41	72·0	14, 14, 14·5
	2 OO	50, 52	37, 40	74·0	13, 14
Congo & Cabinda					
	2 ♂♂	50, 52	36, 36	69·2	14·5, 15
	2 ♀♀	51, 52	38, 38	73·8	14, 14·5
Uganda	3 ♂♂	51, 52, 53	39, 39, 40	75·6	12, 13, 14
	1 ♀	50	34	68	12
	1 O	50	37	74	13
Sudan	1 ♂	51	40	78·4	14
Ethiopia: Kaffa	1 ♀	49	36	73·5	11
	1 O	49	36	73·5	12
Apalis flavida malensis					
Uganda	1 ♂	50	51	102	13·5
	1 ♀	48	50	104·2	13·5
Kenya	2 ♂♂	49, 50	52, 54	107·1	12·5, 14
	1 ♀	47	47	100	12·5
Sudan	1 ♂	49	49	100	14·5
Ethiopia Lakes Rudolf/ Stephanie	2 ♂♂	48, 50	52, 52	106·1	13, 14·5
	3 ♀♀	46, 46, 47	44, 47, 49	100·7	12·5, 13, 13
Yavello–Arero	5 ♂♂	50–53 (51·6)	52–59 (56)	109·9	13–14 (13·0)
	4 ♀♀	47–51 (49)	45–52 (49·2)	105·5	12–13·5 (12·9)

Both the Kaffa specimens weighed 9 g. The unsexed one had caterpillars and small beetle remains in the stomach; the female ants and small beetles.

From the table it appears that the Yavello and Arero birds are larger than the others of *malensis* (they also have the highest tail/wing ratios), but they were collected at higher altitudes (1,300 – 1,500 m) than the others. The race *malensis* is immediately distinguishable in colour from *caniceps* in having the crown green, though the forehead and sides of the head (lores and ear-coverts) are grey, but the grey is browner in tone than in *caniceps;* the tail is quite different too, being browner and proportionally longer (the mean tail/wing ratio being 103·37 in 11 ♂♂ *malensis* against 74·79 in 11 ♂♂ *caniceps*) and the rectrices show conspicuous pale yellowish tips extending back even on the 3rd and 4th for ca 8 mm; furthermore the male of *malensis* has the yellow of the chest mottled with dusky olive.

The Agaro specimen was collected in a dense shrubby coppice in a clearing in dense forest dominated by *Ficus;* the Dembi one in dense woody vegetation fringing a stream on a plateau with a sparse growth of *Acacia.* In neither locality did the species appear to be abundant, though near Jimma, 7°39′N, 36°47′E, altitude 1650 m, on 18th June several individuals were also seen, in a thick woody coppice, by the edge of a small lake. Although no specimen was obtained, it is certain that the birds seen near Jimma were the same as those collected at Dembi and Agaro.

The presence of *Apalis flavida caniceps* in Ethiopia extends the known distribution of this race 1000 km to the east, from Tambura in the south-western Sudan. It is necessary to study carefully the distribution of *malensis* and *caniceps* in the province of Kaffa, where the south is occupied by the former and the north by the latter. According to present knowledge there is an area running north-south for 250 km in which neither has yet been recorded. Should it be established that the two forms come into contact, it would be necessary to pay particular attention to their behaviour. There might be differences, reinforcing the striking morphological ones (colour of the head, and colour and length of the tail), resulting in reproductive isolation between the two forms. Furthermore, it may be significant that the various references in the literature to *malensis* in Ethiopia indicate that it inhabits dry thorn-scrub, which does not correspond to the habitats in which *caniceps* was found at Dembi, Agaro and Jimma. This difference is reinforced by Moreau's remark, cited by Mackworth-Praed & Grant (1941: 45), that "the *Apalis flavida* group is found in very dry thorn-bush and the other group (*Apalis caniceps*) is found in more or less evergreen lowland forest". It is of course also very likely that collecting of further specimens will show that the Ethiopian population assigned to *caniceps* in this account will require a new name.

It would be worth while to follow up the facts exposed in the present note on a wider basis, and to reconsider Grant & Mackworth Praed's arrangement taking into consideration ecological and ethological data. It is understandable that they placed *malensis* and *viridiceps* in a separate group from nominate *caniceps*. On the other hand, it seems much less likely that *flavida* belongs to a separate species from *neglecta* and *tenerrima*, as Grant & Mackworth-Praed would have it. Thus Irwin & Benson (1966: 13) assign these three forms to a single species without question. In particular, in their *Atlas*, Hall & Moreau (1970: 181) suspect that the brown-tailed forms (i.e. *malensis* and *viridiceps*) and the green-tailed forms (which include *caniceps*) are incipient species. Possibly there is a single group in which distinct forms behave only locally as different species, as is apparently the case in *Laniarius ferrugineus*, discussed by Traylor (1962: 109).

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References:

Benson, C. W. 1946. Notes on the birds of southern Abyssinia. *Ibis* 88: 180–205.

Cave, F. O. & Macdonald, J. D. 1955. *Birds of the Sudan*. Edinburgh and London: Oliver & Boyd.

Erlanger, C. Freiherr von. 1905. Beiträge zur Vogelfauna Nordostafrikas IV. *J. Orn.* 53: 670–756.

Friedmann, H. 1937. Birds collected by the Childs Frick Expedition to Ethiopia and Kenya colony. Part 2. —Passeres. *Smithson. Inst. U.S. Nat. Mus. Bull.* 153: 1–506.

Grant, C. H. B. & Mackworth-Praed, C. W. 1941. Notes on eastern African birds: on the races of the Black-breasted Bush-Warbler. *Bull. Brit, Orn. Cl.* 61: 41–45.

Hall, B. P. & Moreau, R. E. 1970. *An Atlas of speciation in African passerine birds*. London: British Museum (Natural History).

Irwin, M. P. Stuart & Benson, C. W. 1966. Notes on the birds of Zambia. *Arnoldia* (*Rhodesia*) 2(32).

Jackson, F. J. & Sclater, W. L. 1938. *The birds of Kenya colony and the Uganda Protectorate*. Vol. 2. London: Gurney & Jackson.

Mackworth-Praed, C. W. & Grant, C. H. B. 1955. Birds of eastern and north-eastern Africa. London: Longmans.

Neumann, O. 1905. Neue Afrikanische subspecies. *Orn. Mb.* 13: 76–79.
— 1906. Vögel von Schoa und Süd-Athiopien. *J. Orn.* 54: 229–300.
Ogilvie-Grant, W. R. 1913. On a collection of birds from southern Abyssinia, presented to the British Museum by Mr. W. N. McMillan. Part I. Passeres. *Ibis* (10)1: 550–641.
Reichenow, A. 1902. *Die Vögel Afrikas. Atlas.* Neudamm: J. Neumann.
Toschi, A. 1959. Contributo alla ornitofauna d'Ethiopia. *Suppl. Ric. Zool. Appl. Caccia* II: 301–412.
Traylor, M. A. 1962. Notes on the birds of Angola, passeres. *Publ. Cult. Diamant.* 58: 53–142.
White, C. M. N. 1962. A check list of the Ethiopian Muscicapidae (Sylviinae). Part II. *Occ. Pap. Nat. Mus. S. Rhod.* 26B: 653–738.
Zedlitz, O. G. 1916. Das Süd-Somaliland als zoogeographisches Gebiet. *J. Orn.* 64: 1–120.

The status of the species of *Amadina*

by P. A. Clancey

Received 26th March, 1971

Hall & Moreau, in their *Atlas* (1970), place *A. fasciata* (Gmelin), the so-called Cut-throat Finch, and *A. erythrocephala* (Linnaeus), the Red-headed Finch, in the same superspecies, and consider it unlikely that there is genuine overlap between the ranges of the two species. It is therefore of interest that while staying on the farm "Uitduiker", near Northam, in the Thabazimbi district, western Transvaal, at ca. 24°55′S, 27°15′E., in May and June, 1969, I encountered and collected several specimens of both species of *Amadina* at their nest sites on the same cattle ranching property. On "Uitduiker" *A. erythrocephala dissita* was found in pairs associated with solitary stick nests of Buffalo Weavers *Bubalornis albirostris niger* placed in high trees in the largely undisturbed bushveld savanna, and gonad examination of specimens taken at the time indicated that they were preparing to breed. In the case of *A. fasciata*, this species was likewise found nest-building, only ca. 1,000 yards away, again in the bulky stick nests of Buffalo Weavers in large and usually old trees, but this time only in those left standing in the farm compound. Five specimens of the Cut-throat Finch were obtained, four males and a single female, which have since become the paratypes of the recently described *A. f. contigua* (see Clancey 1970). As *A. erythrocephala* and *A. fasciata* are now known to breed alongside one another in the western Transvaal, they should be considered as forming a species group rather than allospecies of a superspecies.

It has been stated on several occasions that *A. fasciata* is a recent colonist of both Rhodesia and the Transvaal, though the determination of two races in the region concerned suggests that this view is incorrect, and that this finch was simply overlooked in earlier times before the opening up of the said territories. There does appear, however, to have been some marked range expansion on the part of both races involved (*A. f. meridionalis* Neunzig, 1910: Livingstone, Zambia, and *A. f. contigua* Clancey, 1970: Northam, western Transvaal) in recent times, this associated somehow with the opening up of virgin Africa and the introduction of European agricultural methods (see Clancey 1970). The indications are that the range expansion is continuing. *A. f. meridionalis* appears to be fundamentally a form of the north-east of the South West Arid District, whereas *contigua* is a mesic form of the moist south-eastern aspects of the plateau of southern Africa.

References:

Clancey, P. A. 1970. The southern populations of *Amadina fasciata* (Gmelin) (Aves, Ploceidae). *Zool. Abhandl. Staatl. Mus. Tierkunde Dresden* 31(5): 51–54.
Hall, B. P. & Moreau, R. E. 1970. *An Atlas of speciation in African passerine birds* (Map 406.) London: British Museum (Natural History).

CONTRIBUTORS

Contributions are not restricted to members of the Club. They should be addressed personally to the Editor, C. W. Benson, Department of Zoology, Downing Street, Cambridge. Contributions are accepted on condition that sole publication is offered in the first instance to this *Bulletin*. They should be type-written, double-spaced, with wide margins, on one side of the paper, and submitted in duplicate.

References to literature should be in the same format as in the notice to contributors to the *Ibis* (see any 1970 number). Considerations similar to those in the *Ibis* notice also apply in regard to nomenclature, scientific names of species and genera, and illustrations including photographs. But illustrations including photographs can only normally be considered if the contributor is willing to pay for the cost of their reproduction.

Contributors introducing a new name or describing a new form should append *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In such a description, the introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further headings as required.

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CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, D. R. Calder, "Rustings", Madeira Road, West Byfleet, Woking, Surrey.

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Edited by
C. W. BENSON

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Committee as at 1st January, 1971

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Sir Hugh Elliott, Bt., O.B.E. (*Vice-Chairman*)

C. W. Benson, O.B.E. (*Editor*)

Mrs. J. D. Bradley

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P. L. Wayre

Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 91 No. 4 Published: 20th August, 1971

AUG 1971
PURCHASED

The six hundred and seventy-first meeting of the Club was held at the Cafe Royal, London, S.W.1 on Tuesday, 20th July, 1971 at 7 p.m.

Chairman: Sir Hugh Elliott, Bt., O.B.E.; present: 17 members and guests.

Mr. P. J. Conder addressed the Club on bird protection in Great Britain at the present time. He dealt with the major problems and the action being taken under the Protection of Birds Acts.

Annual General Meeting

The seventy-ninth Annual General Meeting of the British Ornithologists' Club was held at the Criterion in Piccadilly, London, S.W.1. on Tuesday, 18th May, 1971 at 6 p.m. with Dr. J. F. Monk in the chair.

Apologies for absence from the Earl of Mansfield, Sir Hugh Elliott, Bt., and Capt. C. R. S. Pitman were read out.

The Minutes of the 1970 Annual General Meeting (*Bull. Brit. Orn. Cl.* 70: 89–91) were approved and signed.

The Minutes of the Special General Meeting held on 17th November, 1970 (*Bull. Brit. Orn. Cl.* 70: 145) were approved and signed.

The Chairman reported that the increased subscription had come into effect on 1st January in accordance with the amendment to the Rule passed at the Special General Meeting. In remarking on the overall loss of members last year he drew attention, with regret, to the deaths of seven members including so many well-known ornithologists. He also commented on the need for more members in the London area in order to build up attendance at the dinners. He thanked Mr. Calder for his services as Honorary Secretary to the Club in the previous two years.

The Hon. Treasurer commented on the annual accounts and pointed out that the poor financial position was partly due to the poor sales of back numbers of the *Bulletin* during the year. He said that he would try to improve sales in the present year. The item "Miscellaneous Expenditure and Postage" in the Income and Expenditure Account included a charge of £50 by the auditors for preparing the accounts. This charge had not been levied in previous years and had been made without prior warning. After representation they had agreed to reduce it by £20, but this reduction was not shown in the accounts and would appear only in the next year's accounts. The auditors had made it clear that this charge would be imposed in future years. The rising cost of printing the *Bulletin* continued to be a source of worry to the Committee. One encouraging feature was the number of members who had signed new covenants for subscriptions since the year began. This would materially improve the Club's finances.

Mr. J. H. Elgood proposed the adoption of the report and accounts. This was seconded by Mr. C. J. Mead and the meeting approved their adoption.

There being no additional nominations to those proposed by the Committee the following elections were made:

Sir Hugh Elliott, Bt., as Chairman *vice* Dr. Monk who retired.

Mr. J. H. Elgood as Vice-Chairman *vice* Sir Hugh Elliott.

Mr. J. K. Adams to the Committee *vice* Mr. P. L. Wayre who retired by rotation.

Mr. C. J. Mead to the Committee *vice* Mr. P. F. R. Jackson who resigned.

Dr. P. J. K. Burton to the Committee *vice* Mr. Peal who accepted nomination as Hon. Secretary.

Mr. R. E. F. Peal as Hon. Secretary *vice* Mr. D. R. Calder who declined re-election.

Mr. P. Tate as Hon. Treasurer.

The meeting also approved the re-appointment of Messrs. Norton Keen & Co. as auditors to the Club.

There being no further business the meeting closed at 6.40 p.m.

Two vagrants to Ascension Island

by Storrs L. Olson

Received 30th March, 1971

On a collecting expedition for the Smithsonian Institution, Washington, D.C. I spent the period from 12th June to 15th July 1970, on Ascension Island, South Atlantic Ocean. As the island is remote and seldom visited by biologists, it seems worthwhile to report the presence of the following two vagrants.

Porphyrula alleni—Shortly after my arrival on Ascension, Mr. Allan Mills described to me a strange bird that had been captured and released a few days previously. From his description I judged it to be an immature purple gallinule (*Porphyrula* sp.) and I later learned that the bird had been photographed. Mr. Harry Brewster kindly put this photograph at my disposal and related the following story about the bird. It had been found on 10th June 1970 near English Bay, in an apparently exhausted condition. It could not fly but ran fairly well and was captured by workmen who kept it in a box overnight. The next day it was photographed and released near Georgetown and was not seen again. It very likely became a victim of the island's many feral housecats. Although the photograph is not too sharp, the bird can definitely be distinguished as an immature *Porphyrula*. Fortunately, the wing was extended and the primaries can be discerned. The third primary (from the outside) is the longest, a characteristic of *P. alleni*. In *P. martinica* the second primary is the longest. Apparently the only other record of *P. alleni* from Ascension is one taken 27th May 1920 (Lowe 1924). Through the kindness of Dr. David Snow at the British Museum (Natural History), I have been able to re-examine this latter specimen and can confirm its identity. Stonehouse (1960, 1962) mentions the capture of a juvenile Common Gallinule (*Gallinula chloropus*) in an exhausted condition at Mars Bay in early June 1958. In the 1960 account (p. 153) he reports that a farmhand, a long-time resident of Ascension, "had seen others like it in previous years". These observations may well pertain to both *Gallinula* and *Porphyrula*. The African species, *Porphyrula alleni*, is the one to be expected on Ascension in view of the strong southeast trade winds which blow across the island.

Gallinules are notorious trans-Atlantic wanderers. There are a number of records of *P. alleni* from St. Helena (Kinnear 1943; Loveridge 1964). *P.*

martinica turns up regularly at Tristan da Cunha (Rand 1955, and others) and even on the African continent (Winterbottom 1965; Middlemiss 1965). Bannerman & Bannerman (1966) record both species of *Porphyrula* from the Azores, a circumstance that requires further confirmation. Despite the ability of members of this genus to reach the small isolated islands of the Atlantic, they seem never to have established breeding populations on any of them. On the other hand, *Gallinula chloropus* and its derivatives have successfully colonised many oceanic islands throughout the world. *G. c. meridionalis* (I have confirmed the identity of the specimen mentioned by Kinnear, *op. cit.*) is a well established breeding bird on St. Helena (Loveridge, pers. comm., who also informs me that in his 1964 article, the reference to G. *angulata* was an error for *G. chloropus*). On Tristan da Cunha and Gough Islands, the flightless populations referred to as *Gallinula* (*Porphyriornis* auct.) *nesiotis* are obviously derived from *G. chloropus* stock. I suggest that the apparent inability of *Porphyrula* to colonise small islands is due to its much more specialised structure and habits. There are some rather striking morphological adaptations in this genus that are correlated with its specialised existence in a habitat of floating vegetation. *Gallinula*, in spite of its aquatic tendencies, is a generalised, more typically ralline genus which is much better suited to take advantage of new insular environments.,

Arenaria interpres—I first observed a Turnstone along the shore at Clark's Beach late in the afternoon of 15th June 1970. What I presumed to be the same individual was present on 16th, 18th and 19th June at the same place. On 1st July Mr. Dave Gallop and I toured all the beaches of the island looking for the Turnstone and any other shorebirds that might be around, but met with no success. The bird was back in its customary place at Clark's Beach on the mornings of 10th through 13th July. I made several attempts to collect the bird but it could fly well and would not allow of close approach. It seemed to be in neither bright breeding plumage nor juvenile plumage and was always seen foraging in the sand at the water's edge, not among the rocks. Stonehouse (1960: 185) writes that during the B.O.U. Ascension Expedition (October 1957 to May 1959) "Turnstones could occasionally be found among the rock pools by Georgetown, and . . . on the beach of Mars Bay"., but gives no dates. Dr. N. P. Ashmole, who was a member of the expedition ,writes me that his only satisfactory record of a Turnstone was on 23rd January 1959. Packer (1968) lists two Turnstones seen near Georgetown in November 1962. Although the species migrates to the southern parts of Africa and South America and has been recorded from nearly all the islands of the Atlantic, I know of no records from St. Helena or the Tristan group, which seems odd. Summering of boreal-nesting shorebirds, such as Turnstones, in areas well south of their breeding grounds, is a well-known phenomenon. Max Thompson (in MS) has found that the preponderance of summering shorebirds in the Pacific are first year birds. What is of interest about my record, aside from its apparently being the only summer record from Ascension, is that it represents what was certainly a single individual known to have remained in a southern summering locality for at least a month (cf. Loftin 1962).

I would like to thank the Smithsonian Institution and the U.S. Air Force for making my trip to Ascension possible, as well as the many British and American personnel who aided me so much while on the island. Dr. George E. Watson has been of invaluable assistance in making arrangements for my research and commented on a draft of this note.

References:
Bannerman, D. A. & Bannerman, W. M. 1966. *Birds of the Atlantic Islands*. Vol. 3. Edinburgh & London: Oliver & Boyd.
Kinnear, N. B. 1943. Interesting records from St. Helena. *Bull. Brit. Orn. Cl.* 64: 17–18.
Loftin, H. 1962. A study of boreal shorebirds summering on Apalachee Bay, Florida. *Bird-Banding* 33: 21–42.
Loveridge, A. 1964. Reedhens on St. Helena. *The St. Helena "Wirebird"* 4 (118 & 119): 429–430.
Lowe, P. R. 1924 untitled communication. *Bull. Brit. Orn. Cl.* 44: 72.
Middlemiss, E. 1965. Additional record of American Purple Gallinule. *Ostrich* 36: 227–228.
Packer, J. E. 1968. *The Ascension handbook—a concise guide to Ascension Island, South Atlantic.* Georgetown, Ascension.
Rand, A. L. 1955. The origin of the land birds of Tristan da Cunha. *Fieldiana: Zoology* 37: 139–166.
Stonehouse, B. 1960. *Wideawake Island. The story of the B.O.U. Centenary Expedition to Ascension.* London: Hutchinson.
— 1962. Ascension Island and the British Ornithologists' Union Centenary Expedition 1957–59. *Ibis* 103b: 108–123.
Winterbottom, J. M. 1965. American Purple Gallinule in South Africa. *Ostrich* 36: 90.

A wild shot Pintail × Mallard hybrid

by M. A. Macdonald & J. E. Newby

Received 10th May, 1971

On 16th December 1970 A. MacAuslane shot a strange duck from a flight of Mallard (*Anas platyrhynchos* Linnaeus), at Newmachar, Aberdeenshire, Scotland. It was a typical male hybrid, broadly intermediate in plumage and build between a Mallard and a Pintail (*Anas acuta* Linnaeus). It was compared with skins at the Zoology Department, University of Aberdeen, where it is now preserved as a study skin (no. 1971.1.2). A detailed description was taken and follows below. P denotes a Pintail character; M a Mallard one; and PM a Pintail character modified in the direction of Mallard.

Size and shape: The long neck and narrow pointed wings were like those of Pintail (P), but in size it approached Mallard (M).

Head: Forehead and crown feathers glossy green (M), broadly tipped chocolate brown (P); nape glossy green at sides to black in centre (M); cheeks and throat dull dark green (M); white collar on front and sides of neck broader than in Mallard (MP), and produced up side of neck in an indistinct white line (P); no trace of bimaculation, a characteristic often found in hybrids involving Pintail and Mallard (Harrison & Harrison 1971).

Bill: In shape and colour like Pintail; main colour slate grey; nail, base and margin of upper mandible, and band along ridge of culmen, black; lower mandible black with a narrow grey subterminal band (P).

Breast: Upper breast pale chestnut with creamy tips (MP); lower white (P); sides strongly vermiculated grey and black.

Belly: Finely vermiculated grey and black, stronger on flanks (M).

Under tail coverts: Glossy black, bounded anteriorly by a broad white band (M).

Tail: 18 feathers (M); outer seven pairs grey with mottled creamy edges, decreasing in width inwards; eighth darker with a very thin creamy outer margin; centre pair glossy black, long and pointed (P), and slightly upcurved (M).

Upper tail coverts: Dark brown with pale edgings.

Rump: Olive brown with paler edges.

Back: Vermiculated brown-grey and black (PM).
Scapulars: Vermiculated and tinged with buff; outer edge of feathers black.
Wings: Upper coverts olive with dark shafts; primary coverts and alula grey-brown; primaries grey-brown, paler on inner webs; speculum green with a purple sheen (PM); black proximally (P); leading edge formed by chestnut tips of greater coverts (P); broad white trailing edge; tertials brown-grey; axillaries white; wing linings creamy.
Legs and feet: Pale yellow with grey webs.
Measurements: Wing (min.) 274 mm.; bill (from feathers) 57, (depth at nares) 19, (width at nares) 22 mm; tail (total) 110, (centre/outer) 54, (centre/next) 5 mm; tarsus 120 mm.

Discussion: The above description shows that all the characters of the hybrid can be ascribed to males of the two parent species, with perhaps more Pintail than Mallard features expressed. The blue bill, vermiculated back, white belly, and slender build are the most obvious Pintail characters, while the green on the head, chestnut breast, and large size are the most strongly represented Mallard features. Hybrids between species of Anatidae have recently been used to trace relationships within the family (e.g. Sage 1966, Beer 1968), hybrid characters foreign to the parents and similar to other species being regarded as indicative of a close relationship between them. Since none of the features of this hybrid fall into that category nothing can be said of phylogenetic significance.

References:
Beer, J. V. 1968. The tracheae of hybrid Anatidae. *Bull. Brit. Orn. Cl.* 88: 4–15.
Harrison, J. M. & Harrison, J. G. 1971. Notes on a further Pintail × Teal Hybrid. *Bull. Brit. Orn. Cl.* 91: 28–32.
Sage, B. L. 1966. A Chilean Teal × Red-crested Pochard. *Bull. Brit. Orn. Cl.* 86: 50–54.

Taxonomic history of *Schoutedenapus schoutedeni*

by R. K. Brooke

Received 14th April, 1971

Unfortunately I (Brooke 1971) did not make clear the taxonomic history of *Schoutedenapus schoutedeni* (Prigogine) 1960: Butokolo in the eastern Congo. I was preoccupied in arguing against White's (1965) view that it was a synonym of *S. myoptilus chapini* (Prigogine) and failed to make it clear that Hall & Moreau (1962), the first authors to discuss it after Prigogine (1960) had published his novelty, had placed it as a fourth race of *S. myoptilus* (Salvadori) and therefore recognized it as a valid taxon. As a result I did not discuss their view having implied that they did not recognize it at all.

The three known specimens of *S. schoutedeni* were collected in the range of *S. m. chapini* in October and November. They are males in non-breeding condition and apparently adults. Prigogine (1966) pointed out that *S. m. chapini* is in breeding condition in February and March and from July to September. Nothing is known of the time or place of breeding of *S. schoutedeni* and it may be that it is allopatric to *S. m. chapini*. Both *S. m. myoptilus* and *chapini* have lengthy north/south montane breeding ranges, particularly the former (Brooke 1971), and it is difficult to imagine which mountain range outside the range of *S. myoptilus* it frequents for breeding. I assume that the three east Congolese specimens are not vagrants from some quite other part of Africa. But even if the breeding range were known and were allopatric to that of

S. m. chapini I would probably still consider it a separate species primarily on account of the difference in the shape and proportion of the outermost rectrix in *S. schoutedeni*. This feather is much less elongate and emarginate than in adult *S. myoptilus* but much more so than in juveniles and immatures. Lack (1956) pointed out how important the shape and proportion of the outermost rectrix was in making sense of the many taxa assigned to *Apus* by authors. I find the same to be the case in *Cypsiurus* (Brooke in prep.). I therefore believe that it is more informative to treat *S. schoutedeni* as a full species pending receipt of further specimens and some data on its biology.

References:

Brooke, R. K. 1971. Geographical variation and distribution in the swift genus *Schoutedenapus*. *Bull. Brit. Orn. Cl.* 91: 25–28.

Hall, B. P. & Moreau, R. E. 1962. A study of the rare birds of Africa. *Bull. Brit. Mus. Nat. Hist. Zool.* 8(7): 315–378.

Lack, D. 1956. The species of Apus. *Ibis* 98: 34–62.

Prigogine, A. 1960. Un nouveau martinet du Congo. *Rev. Zool. Bot. Afr.* LXII (1–2): 103–105.

Prigogine, A. 1966. Note on Chapin's Swift. *Bull. Brit. Orn. Cl.* 86: 1–5.

White, C. M. N. 1965. *A revised check list of African non-passerine birds*. Lusaka: Government Printer.

The splenius capitis muscle of swifts

by P. J. K. Burton

Received 25th March, 1971

In a recent paper, Brooke (*Durban Mus. Novit. IX* (2), 1970: 13–24) refers to a personal communication from myself to the effect that M. splenius capitis (a cervical muscle inserted on the skull) is of simple structure in his proposed sub-family Cypseloidinae and complex in his Apodinae. This statement is incorrect; it originated from a conversation during September 1969, when my work on M. splenius capitis was in a preliminary stage. This study has now been completed, and its results published (Burton, *Ibis* 1971: 19–28). The present note is intended to clarify the point raised in Brooke's paper in the light of these results.

Brooke's term "complex" applies to a condition of the pair of MM. splenii capitis which I have named the "cruciform origin". This condition is present in all members of the Apodiformes which I have examined, including the Trochilidae and Hemiprocnidae, as well as the Apodidae. I have dissected 11 species of Apodidae, from the genera *Cypseloides*, *Nephoecetes* and *Streptoprocne* (members of Brooke's Cypseloidinae) and *Collocallia*, *Hirundapus*, *Chaetura*, *Cypsiurus* and *Apus* (members of Brooke's Apodinae). Brooke's statement evidently arose from my remarks concerning *Streptoprocne zonaris*, which shows a less extreme form of the cruciform origin than other species of swifts examined. In this species, the anapophyses of the 2nd cervical vertebra (from which M. splenius capitis originates) remain distinct, whereas in the rest, they are fused with the neural spine to form a continuous ridge. However, *Cypseloides* and *Nephoecetes* resemble the genera which Brooke assigns to the Apodinae in this respect. It is worth mentioning that in the Hemiprocnidae, a similar difference was found within the single genus *Hemiprocne;* specimens of *H. comata* examined showed a similar condition to *Streptoprocne*, whereas in *H. mystacea*, anapophyses and neural spine are fused as in most Apodidae.

The atypical condition seen in *Streptoprocne* may prove to be of some functional interest. However, I do not consider it relevant to the separation of these two subfamilies, and recommend that the structure of the MM. splenii capitis be omitted from any future discussion of this proposal.

My thanks are due to Richard Brooke for reading this note in draft. He agrees that the structure of M. splenius capitis is not relevant in any attempt to split the Apodidae but still believes that the other factors adduced justify his proposals.

The Yellow-browed Warbler *Phylloscopus inornatus* wintering in Iran

by Christian Hjort

Received 5th May, 1971

According to current literature (Ticehurst 1938, Dement'ev *et al.* 1968, Vaurie 1959) the winter range of the Yellow-browed Warbler *Phylloscopus inornatus* does not include Iran. Vaurie (1959) notes that the subspecies *humei* winters in Afghanistan east of Kabul south of the Hindu Kush and in the Paropamisus and foothills to the border of Iran. He also mentions the one bird, belonging to the *humei* subspecies, which was collected at Birjand in Khorasan, eastern Iran, on 4th January 1927 (Ticehurst 1938). This seems to be the only winter observation of the species hitherto made in Iran (one observation, made in Gorgan on 16th March 1917, and mentioned by Schüz 1959, falls within the period of spring migration).

Taking this into account it was with some surprise that during January 1971 I found the bird at three different places in that country. In Kerman one bird was seen on the 18th, in Zahedan in Baluchistan two birds were seen on the 20th and a minimum of two more heard, and finally on the 25th one bird was seen in Teheran. The observations were made at close range and, except the one in Teheran, with the help of binoculars (7 × 50).

All the birds had a rather greyish appearance, greyish white below and greyish green above. This was probably partly due to worn plumage. The pre-nuptial moult, according to Ticehurst (1938), begins in early March. Also on only one of the birds were both wing bars clearly visible, on two the frontal one could be seen only with some difficulty, and on one bird it was invisible even with the help of binoculars.

Of course the fact that none of the birds were studied in the hand prevents me from judging as to which subspecies they belonged, although for geographical reasons *humei* seems to be the most probable one. Also according to my notes the call (surprisingly loud for such a small bird) has a rather resemblance to the "tiss yip" stated by Ticehurst (1938) to be characteristic for *humei*. But as they were written down in "swedish" it does not seem adviseable trying to re-do them into "english" here. Note also that Dement'ev *et al.* (1968) have a rather different description of the respective calls of the *humei* and *inornatus* subspecies, as compared with that given by Ticehurst (1938).

References:

Dement'ev, G. *et al.* 1968 *Birds of the Soviet Union.* VI. Jerusalem: Israel Program for Sci. Translations (translations from version in Russian, 1954).

Schüz, E. 1959, *Die vogelwelt des südkaspischen tieflandes.* Stuttgart: Schweiz. Verlagsb.

Ticehurst, C. B. 1938. *A systematic review of the genus Phylloscopus.* London: British Museum (Nat. Hist.).

Vaurie, C. 1959. *The birds of the palearctic fauna. Passeriformes.* London: H. F. & G. Witherby.

Two new parrots from the Philippines

by Kenneth C. Parkes

Received 18th May, 1971

Study of collections of birds from the Philippine islands of Leyte and Luzon, received in recent years by the American Museum of Natural History and kindly made available to me by Dr. Dean Amadon, has revealed the existence of several subspecies hitherto unnoticed because of inadequate material. Two of these, both members of the Psittacidae, are described below.

The endemic Philippine genus *Bolbopsittacus* contains a single species, the Guaiabero, *B. lunulatus*. Three subspecies are currently recognized: *B. l. lunulatus* (Scopoli) of Luzon, *B. l. intermedius* Salvadori of Samar and Leyte, and *B. l. mindanensis* (Steere) of Mindanao. Salvadori (1891) described *intermedius* from a single male specimen of unknown origin from the Cuming collection in the British Museum (Natural History). Hachisuka (1934: 91) gave the type locality of *intermedius* as Samar (without explanation), and his designation was accepted by Peters (1937: 253). Such a restriction would be appropriate if the birds of Samar and Leyte were identical, but comparison of specimens from these two islands reveals a subspecific difference. Under these circumstances, the type locality of *intermedius* must be determined by the characteristics of the type specimen rather than by an arbitrary designation. I therefore sent a Leyte and a Samar specimen to the British Museum for comparison with the type. Mr. I. C. J. Galbraith (letter of 31st October 1962) wrote as follows: "Mr. Derek Goodwin has compared the type of *Bolbopsittacus intermedius* Salvadori with the two specimens you sent. There seems no doubt that it belongs to the Leyte form since it agreed with AMNH 768237 in all the points you mention. It is a good match with this specimen and some . . . slight differences are probably due to mild foxing of the type".

The type locality of *intermedius* is therefore corrected to Leyte, and the Samar bird requires a name. It may be called:

Bolbopsittacus lunulatus callainipictus, subsp. nov.

Type: American Museum of Natural History no. 622077, adult male, collected at Bonga, Samar, Philippine Islands, 13th July 1896, by J. Whitehead.

Characters: Nearest *B. l. intermedius* of Leyte, but males differ in having the face and nuchal band of a less pure and deep blue, more greenish blue; the blue area of the cheeks is also less extensive. The rectrices, especially the central pair, are greener, less blue, and the general body colour, especially of the underparts, is a more yellowish green. In females the tail colour difference is less obvious but the difference in general body colour is apparent; in addition, the yellow of the nuchal collar of Samar females is richer, as is the yellow ground colour of the rump area. These colour differences represent a trend in the direction of *B. l. lunulatus* of Luzon, in which the face and nuchal band are paler and very much greener blue, and the rectrices virtually lack any blue. This is just what would be expected on the basis of geography, as Samar lies between Luzon and Leyte. The three subspecies *lunulatus*, *callainipictus*, and *intermedius* may be thought of as representing a stepped cline, but each is worthy of its own name, as the island samples are quite consistent in their characters, and, further, there is no apparent geographic variation *within* the large island of Luzon. The Mindanao subspecies *mindanensis* differs strikingly in the reduction of the blue areas of the head, the entire cheek area being green rather than blue.

Range: The island of Samar, Philippines. The Guaiabero has not yet been reported from the island of Bohol, which generally resembles Samar and Leyte in its avifauna.

Etymology: From Latin *callainus*, turquoise-coloured or greenish-blue, and *pictus*, painted.

Specimens examined: B. l. intermedius, Leyte, 10; *B. l. callainipictus*, Samar, 8. Also series of *B. l. lunulatus* from Luzon and *B. l. mindanensis* from Mindanao.

Two species of the parrot genus *Tanygnathus* are widely distributed in the Philippine archipelago. The larger and less common, the Blue-backed Parrot, was formerly known as *T. mulleri* (for example, in Peters 1937), but Stresemann (1938) showed that the earlier name *Psittacus sumatranus* Raffles applied to this species. Peters admitted three races in the Philippines: *everetti* Tweeddale (type locality Butuan, Mindanao), *freeri* McGregor (Polillo Island), and *burbidgii* Sharpe (Sulu Islands). Delacour & Mayr (1946: 101) recognized only *everetti* and "*burbidgei*" [*sic*], presumably synonymizing *freeri* with *everetti*, although stating that the latter "has been found so far on Luzon, Negros, Panay, and Mindoro", thus omitting Polillo, type locality of *freeri*. I know of no Polillo specimens of this species in museums in the United States. The original specimens of *freeri* were lost when the National Museum of the Philippines was burned during World War II, but a field party from that museum has subsequently visited Polillo and collected *Tanygnathus sumatranus:* Manuel (1957: 318) has designated a specimen collected in 1948 as a neotype. Without having seen specimens, I can say of *freeri* only that its description indicates that it is distinctive in colour and even more so in size. Hachisuka (1934: 88) gives the measurements of *everetti* as wing 195–196, tail 136–138 (sexes not specified), while for *freeri* his measurements (taken from McGregor's original description) are: male, wing 235, tail 170; female, wing 230, tail 165 mm. In an earlier paper, Hachisuka (1930: 161) stated of *freeri:* "Much bigger and much yellower throughout especially noticeable round the neck when compared with typical *everetti*. This parrot is one of the many fine novelties found by McGregor from Polillo . . . ". This wording suggests that Hachisuka had personally examined specimens. Until evidence to the contrary is presented, I believe that *freeri* should be recognized.

Turning now to *everetti*, I find that Rand & Rabor (1960: 384), who added Samar to the known range of the species, were undoubtedly correct in their conjecture that the differences in colour they described among their two Samar and three Negros females (they found no differences among their males) were attributable to differential wear. The American Museum of Natural History has recently received a specimen of this species from Barrio Patok, Dagami, Leyte (taken on 21st July 1961), thus adding that island to the species' known range. In comparing this specimen with two from Mindanao, two from Negros, and three from Samar, it is obvious that there are no significant differences, and all may be called *everetti*. Four Luzon specimens, however, when compared with these *everetti*, are clearly separable. The Luzon population may be known as:

Tanygnathus sumatranus duponti, subsp. nov.

Type: American Museum of Natural History no. 767692, adult male, collected at Barrio Disulap, San Mariano, Isabela Province, Luzon, Philippine Islands, 25th May 1961, by G. Alcasid *et al.* (collectors' no. 579).

Characters: Nearest *everetti* but with blue of lower back (and edgings of upper back, before these have worn away) lighter, purer blue (less deep purplish blue), and with under wing coverts decidedly yellowish rather than green. The differences in tone of blue are consistent even in worn individuals, and the colours of the under wing coverts are not normally subject to change through wear.

Range: Island of Luzon, Philippines.

Etymology: This new subspecies is named for Mr. John E. duPont, Director of the Delaware Museum of Natural History, in recognition of his contributions to our knowledge of Philippine birds.

Acknowledgments: Travel to New York to study collections of Philippine birds at the American Museum of Natural History was made possible through a grant from the Frank M. Chapman Memorial Fund of that institution. Specimens of both of these parrot species were examined in the Delaware Museum of Natural History through the courtesy of Mr. du Pont, after this study had been essentially completed in New York; these specimens are not included in the lists above. I am grateful to Mr. Galbraith and Mr. Goodwin of the Bird Room, British Museum (Natural History) for comparing specimens with the type of *Bolbopsittacus intermedius*.

References:

Delacour, J. & Mayr, E. 1946. *Birds of the Philippines*. New York: Macmillan.
Hachisuka, M. 1930. Contributions to the birds of the Philippines. No. II. Part VI. *Ornith. Soc. Japan, Suppl. Publ.* no. XIV: 141–222.
— 1934. *The Birds of the Philippine Islands*. Part III. London: Witherby.
Manuel, C. G. 1957. Neotypes of some Philippine birds. *Philippine Journ. Sci.* 85: 315–321.
Peters, J. L. 1937. *Check-list of birds of the world*, vol. 3. Cambridge, Mass.: Harvard Univ. Press.
Rand, A. L. & Rabor, D. S. 1960. Birds of the Philippine Islands: Siquijor, Mount Malindang, Bohol, and Samar, *Fieldiana: Zoology* 35: 221–441.
Salvadori, T. 1891. *Catalogue of the birds in the British Museum*, vol. XX. London: British Museum (Natural History).
Stresemann, E. 1938. Vorläufiges über die ornithologischen Ergebnisse der Expedition Heinrich 1930–1932. IX. Letzte Ergänzungen zur Avifauna von Celebes. *Ornith. Monatsber.* 46: 147–149.

A new subspecies of Pitta from the Philippines

by Kenneth C. Parkes

Received 18th May, 1971

One of the handsomest in a family of generally handsome birds is *Pitta steerii*, an endemic Philippine species. Its head and nape are black; throat white; breast, flanks, rump, and a large patch on the wing coverts delicate blue; primaries, tail and abdomen black; crissum scarlet; back and inner secondaries green, the latter with deep blue edgings. According to current literature, the species is known only from the islands of Mindanao, Bohol, and Samar. The avifauna of the latter two islands is closely related to that of Leyte, which in fact lies between Bohol and Samar, so the presence on Leyte of Steere's Pitta was to be anticipated. This expectation was realized when the American Museum of Natural History, New York, received a specimen collected by G. L. Alcasid on 28th July 1961 at Barrio Patok, Dagami, Leyte. Study of this specimen together with the limited series from Samar and Mindanao in New York (the species is rather rare in collections) suggested the possibility of previously unnoticed geographic variation in *Pitta steerii*. Examination of material in additional museums confirmed the existence of two recognizable subspecies. Their distribution conforms with a well-known pattern in Philippine zoogeography, in that the Mindanao population differs from those of the other three islands collectively. The type locality of *Brachyurus steerii* Sharpe is Dumalon, Mindanao. The unnamed race may be called:

Pitta steerii coelestis, subsp. nov.

Type: American Museum of Natural History no. 554153, adult male, collected at Bonga, Samar, Philippine Islands, 3rd July 1896, by J. Whitehead (collector's no. B754).

Characters: Differs from *P. s. steerii* of Mindanao in having all blues (underparts, wing coverts, rump) purer, less turquoise (greenish). This is best compared on the rump and wing coverts in many specimens, as the underparts are more subject to wear and discoloration, but is obvious when clean, freshly moulted specimens are compared. In addition, the dorsum of *coelestis* is of a distinctly darker and bluer (less yellow) green.

Range: The Philippine islands of Samar, Leyte, and Bohol.

Acknowledgments: This note is an outgrowth of a study of the birds of Leyte, supported by a grant from the Frank M. Chapman Memorial Fund of the American Museum of Natural History. I am grateful to the authorities of that institution, and those of the Field Museum of Natural History, Chicago, and the Peabody Museum of Natural History, Yale University, for access to their collections.

Specimens examined: P. s. steerii, Mindanao, 10. *P. s. coelestis*, Leyte, 1; Samar, 11; Bohol, 8.

A back-cross hybrid involving Cinnamon Teal and Northern Shoveler, and remarks on hybrid characters in the group of "Blue-winged Duck"

by James M. Harrison & Jeffery G. Harrison

Received 11th May, 1971

This individual is the result of a cross between, as the male parent, a hybrid Northern Shoveler, *Anas clypeata* Linnaeus, female, and Cinnamon Teal, *Anas cyanoptera*, Vieillot, male, and a female Northern Shoveler, so that the bird is two-thirds Shoveler and one-third Cinnamon Teal. The bird was bred by Aubrey Buxton by design at the Stansted Wildlife Park in 1967, dying when a year old on 12th May 1968. It is now in the Harrison Zoological Museum collections, and is illustrated as Plate 1.

The overall appearance of this remarkable specimen is predominantly Shoveler, and in fact it bears so close a resemblance to the New Zealand Shoveler, *A. rhynchotis variegata* (Gould), as to be almost indistinguishable.

Description—Upper parts: from the root of the neck to the upper mantle, pale ash barred closely with sepia. Towards the mantle the ground colour becomes warmer by suffusion with pinkish-buff. The centre of the mantle is dark brown with paler indistinct narrow feather margins; the rump is dark brownish-sepia. The upper tail coverts are very dark sepia shot with greenish-blue reflections laterally. The central feathers are lighter and browner with narrow paler feather margins. The rectrices are ash-brown with broadish almost white margins, intermediate between those of the two species involved.

Under parts and flanks: ground colour of breast somewhat similar to, but

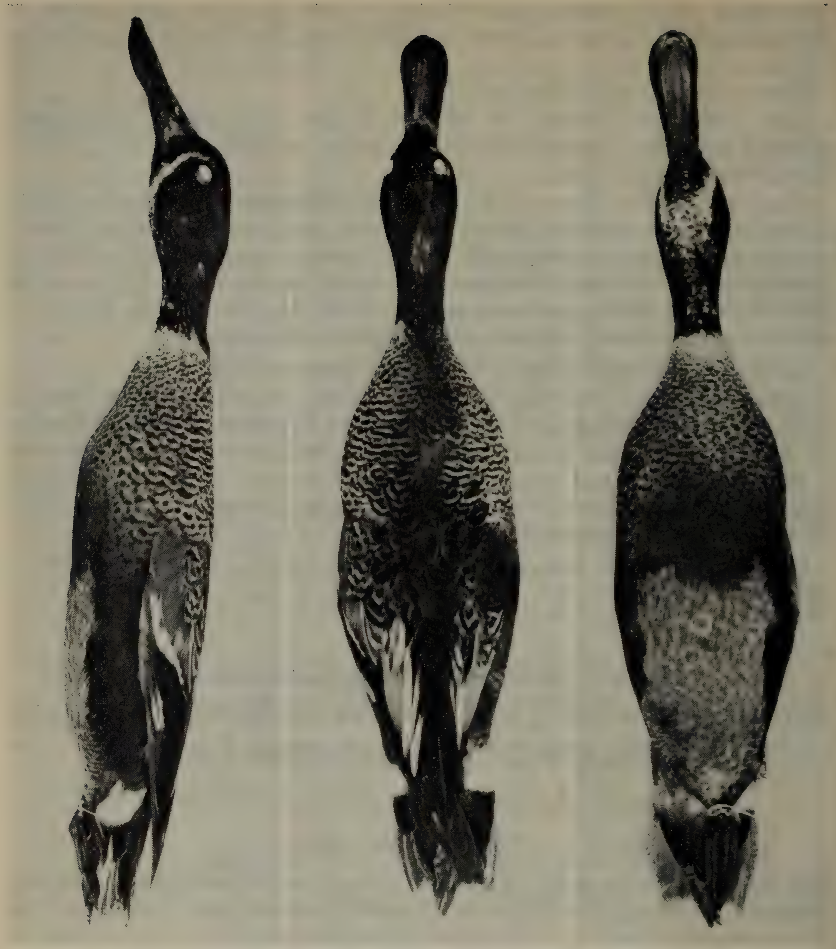


Plate 1. The hybrid: side, back and front views

warmer than, upper mantle and root of neck, with prominent central spotting merging into barring on either side. Lower breast and flanks rich chestnut, but towards root of tail some narrow sepia barring. Embracing the root of the tail on either side are white patches. The belly is still largely in juvenile dress, and is pale ash. Under tail coverts greyish-white, closely barred sepia, merging proximally into sooty-black with greyish-white speckling distally. Under surfaces of rectrices pale greyish-ash, outer vanes pale brownish-ash, sparsely speckled with palest sepia.

Wings: general pattern typical of Delacour's (1956: 159–189) group of "Blue-winged Duck". The wings of the hybrid and both parents are similar, although in the longest scapulars of *A. clypeata* the inner vanes are white and in *A. cyanoptera* cinnamon-brown. In the hybrid these are white. The short scapulars are pale cinnamon-brown with broad broken sepia bars.

Head and neck: these are sooty with well marked post-ocular greenish reflections extending down the sides of the neck to the well defined whitish neck ring. There is a strongly marked white crescent on either side of the face, extending from in front of, and above, the eyes to meet below the sooty chin spot. This area is sparsely mottled with sepia. The iris was pale yellow-ochre, the tarsi and toes ochreous, the webs and nails dusky. The upper mandible was dull black, and the lower pale pinkish-flesh.

Measurements in millimetres:—

	A. clypeata ♂	Hybrid	*A. cyanoptera* ♂	*A. rhynchotis* ♂
Wing	*230–252	206	193	*235–250
Culmen:				
From feathers	*62–70	58·5	44	*60–72
From anterior of nostril	48·5	46·5	33	—
Width at nostrils	18	18	14	—
Width at widest point	30	25	16	—
Tarsus	*32–37	36	33	*34–42

* after Delacour (1956)

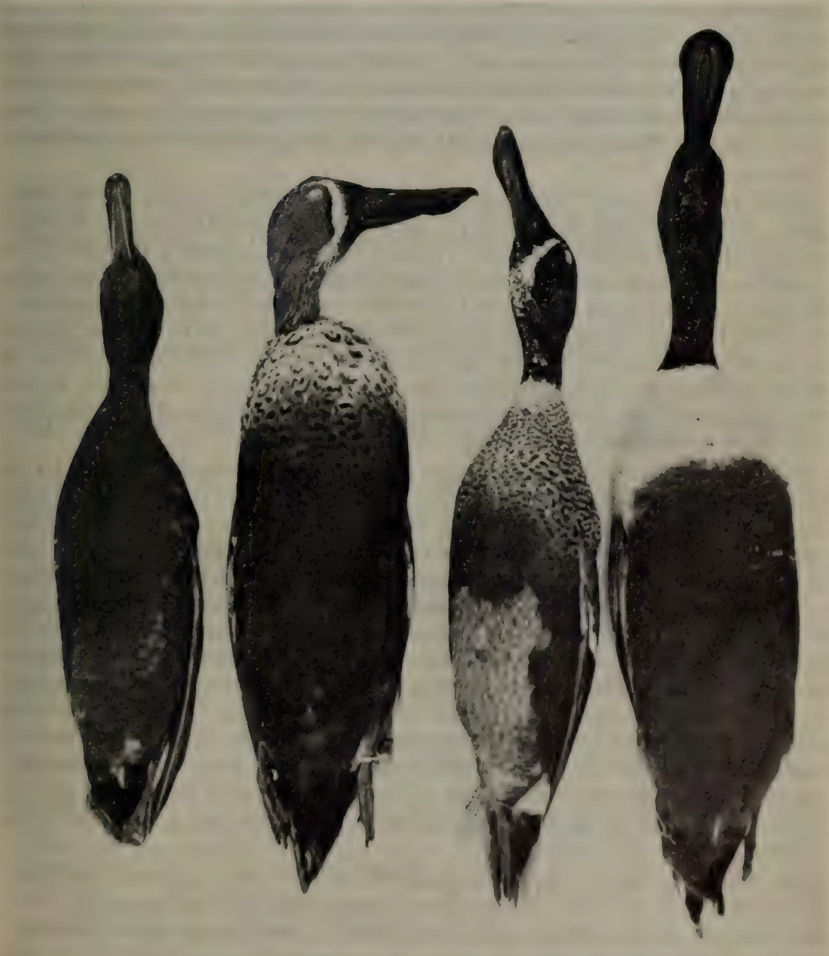


Plate 2. Cinnamon Teal: Australasian Shoveler; the hybrid; Northern Shoveler. Drakes

Discussion: The plumage of this hybrid does not appear to be intermediate with that of the parents, but exhibits a marked tendency towards characters found in another species, the Australasian Shoveler, *A. rhynchotis*, in that in the process of hybridisation white facial crescents have been exposed, an instance of heterophoric reverse mutation (Harrison 1953). The appearance of the present hybrid is very similar to the straight interspecific hybrid *A. cyanoptera* × *A. clypeata* (Harrison & Harrison 1965). The effect of a backcross with *A. clypeata* in the present case was to accentuate the facial crescents and the amount of white on the breast (A. Buxton, pers. comm.). This same facial pattern has also been described by us (Harrison & Harrison 1963) in the case of a hybrid *A. platalea* × *A. clypeata*. In addition this hybrid, and the one described above, both show a distinct white neck ring, a constant character in drake Mallard, *A. platyrhynchos* Linnaeus. Furthermore, Delacour (1956: 159) notes that the downy young of the "Blue-winged Duck" group resemble very closely those of the Mallard and its near relatives.

Delacour (1956: 181) describes hybrids between the Northern Shoveler and the Blue-winged Teal, *A. discors* Linnaeus, as being very similar in colour to the Australasian Shovelers, only slightly smaller and paler. The fact that these hybrids show white facial crescents could be expected, as in one of the parent species concerned this character is dominant, whereas in the other hybrid parents already mentioned above the character must be regarded as recessive.

Delacour's group of "Blue-winged Duck" exemplifies increasing specialisation of the bill from the relatively simple bills of the Garganey, *A. querquedula* Linnaeus, and Blue-winged Teal through the Cinnamon Teal, in which the bill has increased in length, to the Red Shoveler, *A. platalea* Vieillot, with its comparatively small spatulate bill, while the bills of the Cape Shoveler, *A. smithii* Hartert, Australasian and Northern Shovelers represent the highest degree of specialisation. Of the four Shoveler species, sexual dimorphism is relatively slight in Red and Cape Shoveler, moderately developed in the Australasian and extreme in the Northern Shoveler, indicating that the latter is the most specialised of the group.

The cross which is the main subject of this paper, the two discussed by us previously (Harrison & Harrison 1963; 1965), and those described by Delacour (1956: 181), all have included in their parentage the Northern Shoveler, and one or other of the three species showing less specialisation, i.e. the Cinnamon Teal, Blue-winged Teal and Red Shoveler. In their progeny they exhibit characters towards an intermediate species on the evolutionary scale, i.e. the Australasian Shoveler. At the same time, the more basic character of the white neck ring of the Mallard is also exposed. Obviously a common gene-pool operates here, otherwise these unexpected hybrid characters could not be revealed. Delacour's group of "Blue-winged Duck" has a world-wide breeding distribution, with three representatives in North America, two in South America, two in Eurasia and one each in Africa and Australasia. Clearly all these species share their origin in a common gene pool and in which a free interchange of genes can be demonstrated as a result of these hybrid studies.

Our findings clearly support Delacour's view (1956: 160) that the Blue-winged Ducks represent a distinct line of evolution. This appears to us to be contradictory to his remarks (*op cit.:* 19) that "There is even good evidence that the Shovelers do not constitute a monophyletic group: the South American Red Shoveler (*platalea*) and the Cinnamon Teal (*cyanoptera*) on one side; the Australian–New Zealand Shoveler (*rhynchotis*) and the Blue-winged Teal (*discors*) on the other, greatly resemble each other in plumage pattern, so nearly that the closest relationship must be assumed".

In our opinion it is questionable whether it is correct to assume a close relationship on the apparent presence or absence of a character (i.e. the white facial crescent), which we have now shown to to be present but recessive, becoming a dominant recessive in hybrids involving Northern Shoveler, Red Shoveler and Cinnamon Teal.

Summary: A back-cross Northern Shoveler × Cinnamon Teal ♂ × Northern Shoveler ♀ is described, in which characters of the Australasian Shoveler are revealed. The presence of a white neck ring also suggests a relationship with Mallard. Other hybrids within Delacour's group of "Blue-winged Duck" are discussed, and in their characters strongly support the hypothesis that this group has evolved as a single line within the genus *Anas* and with affinities to the Mallard.

Acknowledgements: Our grateful thanks are due to Aubrey Buxton for presenting us with the hybrid described in this paper, and for relevant details of its origin, and to Dr. David Snow for the loan of an Australasian Shoveler skin from the British Museum (Natural History). Once again we are indebted to Dr. Pamela Harrison for the photographs herein reproduced. We are also grateful to C. W. Benson for his most helpful criticism of this paper.

References:

Delacour, J. 1956. *The Waterfowl of the World*, vol. II. London: Country Life.

Harrison, J. M. 1953. On the significance of variations of patterns in birds. *Bull. Brit. Orn. Cl.* 73: 37–40.

Harrison, J. M. & Harrison, J. G. 1963. Comments on a hybrid Red Shoveler × Northern Shoveler. *Bull. Brit. Orn. Cl.* 83: 21–25.

— 1965. A Cinnamon Teal × Northern Shoveler hybrid. *Bull. Brit. Orn. Cl.* 85: 107–110.

[The cost of the plates in the above paper was borne by the authors—Ed.]

Wintering of *Saxicola torquata* in the Algerian Sahara

by E. D. H. Johnson

Received 11th May, 1971

The object of this paper is to clarify the wintering status of the Stonechat *Saxicola torquata* in the northern and central Algerian Sahara and in the adjacent south-eastern corner of Morocco. This is considered in relation to the few scattered references in the literature and in the light of observations which I made during the winters of 1968, 1969 and 1971. On all occasions I was accompanied by my wife G. F. Johnson and, in 1968 and 1969 respectively, by C. G. Headlam and J. H. English.

The literature: Heim de Balsac & Mayaud (1962), summarizing the literature to that date, list the following winter records of stonechats within the Sahara:

Touggourt, 33° 08′ N., 6° 04′ E. One on 14th December (Geyr von Schweppenburg).
60 km. south of Laghouat, 33° 16′ N., 3° 00′ E. No details given (Laenen & Niethammer).
On the Oued Mya, south of Ouargla, 32° 00′ N., 5° 16′ E. One on 12th April (Hartert).
Ain Taiba, 30° 20′ N., 5° 45′ E. One female shot on 2nd January (Geyr von Schweppenburg).

Emphasizing the extreme rarity of such observations, they stress the importance of Hartert's record on the Oued Mya, although Geyr's Ain Taiba bird receives no similar comment.

Van Hecke (1965) discusses the recovery of a Dutch-ringed first year bird on 16th November, 1952 at Beauprêtre, 32° 20′ N: 3° 41′ E., to the south of Gardaia, 32° 30′ N: 3° 40′ E., where Gaston (1970) found a single stonechat on 1st February, 1968. Blondel (1962) records a sparse, predominantly male population at Djenien Bou Rezg, 32° 18′ N: 0° 48′ W., between 28th November 1960 and 28th February, 1961. Dupuy (1969), who ringed stonechats at Beni Abbes, 30° 11′ N: 2° 14′ W., in February 1965, suggests that this latitude corresponds to the southerly limit of the range of the species in the Sahara.

Smith (1965) states that in Morocco the stonechat is 'not rare along the Saharan fringe in winter, mostly in the larger river valleys, but at times in open desert with bushes . . .' He has kindly made available to me the whole of his relevant data which include the following records for the Sahara proper:

Figuig, 32° 10′ N., 1° 15′ W. One male on 8th February, 1963.
Bouanane, 32° 02′ N., 3° 02′ W. One male on 12th February, 1963.
In the Gorges du Ziz, between Ksar-es-souk, 31° 55′ N., 4° 26′ W. and Erfoud, 31° 25′ N., 4° 13′ W. Two on 21st November, 1963.
Merzouga, 31° 04′ N., 3° 59′ W. One on 22nd November, 1963.

The Algerian Sahara: In the region under discussion, the northern limit of the Sahara, as defined by Quézel (1965), closely follows the 100 mm. isohyet. It is represented approximately by a line following the southern edge of the Jbel Sarhro range of the Great Atlas foothills, joining Boudenib, 31° 55′ N: 3° 38′ W., Bechar, 31° 35′ N: 2° 17′ W., Figuig, 32° 10′ N: 1° 15′ W., Biskra, 34° 50′N: 5° 40′ E., and Gafsa, 34° 28′ N: 8° 43′ E., and curving southward somewhat between Figuig and Biskra to include the Plateau des Daias well to the south of Laghouat (see map). It is in relation to this line that penetration by wintering stonechats should be assessed, rather than in terms of latitude alone. To the south of it the Sahara proper is composed of vast areas of stony desert (*hammada*) overlaid by the two irregular dune-sand (*erg*) masses of the Grands Ergs Occidental and Oriental. The oases are discussed below.

Separating the Sahara from the stonechat's coastal breeding and wintering area, within and to the north of the middle and Tellian Atlas mountains, is the 200 km. wide and 1,000 m. high mass of the combined Hauts Plateaux and the Plateau des Daias. This arid zone, with night temperatures regularly below freezing from December to February, supports a steppe vegetation of Halfa Grass *Stipa tenacissima* and *Artimesia herba-alba.* Its two parts are separated, in places to a height of an additional 1,000 m., by the Saharan Atlas Mountains.

South-east Morocco: The ill-defined Morocco-Algerian frontier encloses, between a little to the north of Bechar and a few kilometres to the south of Erfoud, a northward loop of the Saharan boundary. The western quarter of the Hauts Plateaux lies within Morocco. To the west of these areas the Atlas *massif* separates them from the broad Atlantic coastal plain where stonechats commonly breed and winter.

Observations 1968–71: Our itineraries were:

1968 (20th January–3rd March) Defilia, Bechar and along the Oued Saoura to Adrar and Reggane. Return along the same route, with excursion to Timimoun and departure via Ain Sefra.

1969 (21st January–11th February) Messaad, Aflou, Ain Sefra, Bechar and along the

Oued Saoura to Reggane. Return along the same route, with excursion to Timimoun and continuation to Biskra.
1971 (9th–28th February) Complete circuit of the Grand Erg Occidental, *via* Ain Sefra, Aflou, Laghouat, Gardaia, excursion to Ouargla, El Golea, Timinoun, the Oued Saoura, Bechar and Defilia.

The following observations were made:

Defilia, 32° 15′ N., 1° 22′ W. A pair and a single male in territories at the edge of the small palmery, and a further male among scrub bordering the *shott* 6 km. to the east, 21st to 23rd January, 1968.
Beni Abbes. Two pairs with regular territories at opposite ends of the palmery and a further one male and three females in gardens and on the desert fringes of the town, between 26th January and 23rd February, 1968. A pair in one of the palmery territories on 28th January, 1969 and a single male in the same territory on 21st February, 1971, when a second male occupied a small, very enclosed territory in the centre of the palmery.
Zaouira el Kbira, 29° 28′ N., 1° 30′ W. A pair in a clearing in the palmery on the outskirts of the village, 9th February, 1968.
Timimoun, 29° 15′ N., 0° 15′ E. A pair on the bluff above the town midden and a single male among the tamarisks at the foot of the palmery, 5th–8th February, 1968. A single male in the same territory as the pair, 3rd–4th February, 1969.
Ouargla. A pair at the eastern end of the causeway across the *shott*, with a territory defined by the causeway and the palm-frond fence of the waterside gardens, 14th February, 1971.
South of Ain Sefra, 32° 45′ N., 0° 35′ W. A single male among the scrub to the south of the town, where the steppe gives way to *hammada*, 24th January, 1969.

Additional observations were made within the Hauts Plateaux:

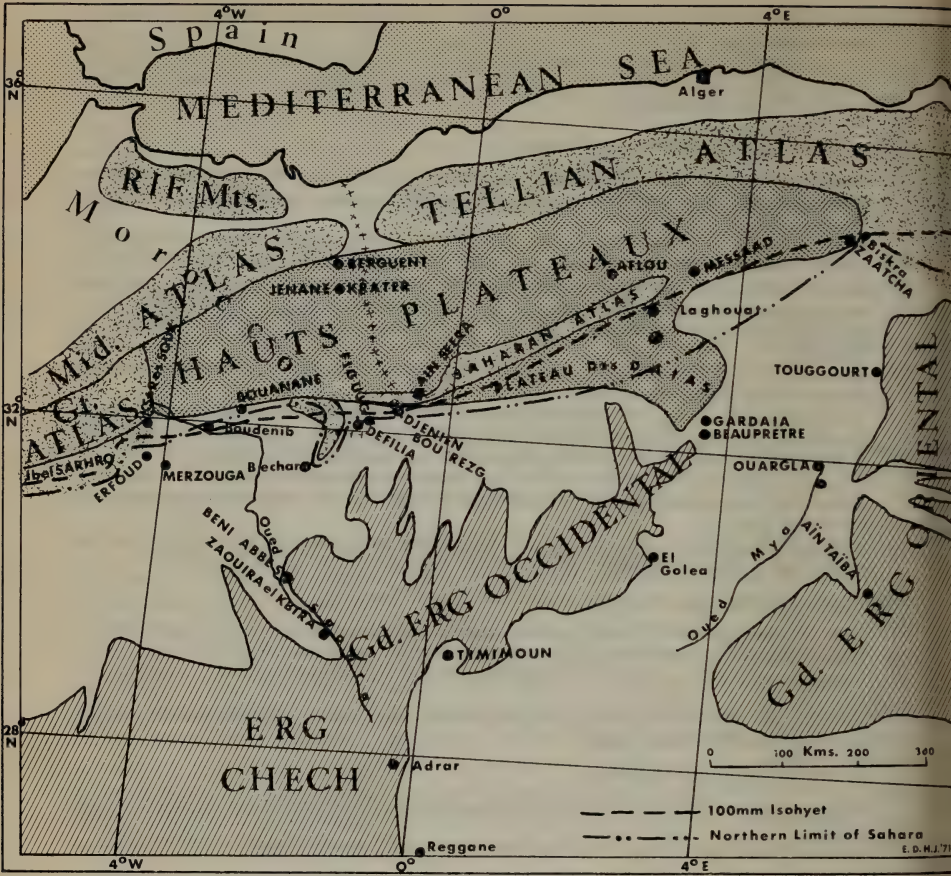
Near Aflou, 34° 08′ N., 2° 03′ E. A male with a well defined territory in an area of nomad cultivation surrounded by scrub and thistles, 11th February, 1971.
Messaad, 34° 11′ N., 3° 31′ E. A male in a derelict part of the palmery, 22nd January, 1969.
Zaatcha, 34° 48′ N., 5° 35′ E. A male in an open area of cultivation at the edge of the palmery, 10th February, 1969.

and by K. D. Smith (*in litt.*):

Berguent, 34° 02′ N., 2° 02′ W. "Rather sparse where there were bushes", 31st January, 1963.
Jenane Krater, 33° 31′ N., 1° 56′ W. A male on 4th February, 1963.

Discussion: Erfoud, Bouanane, Defilia, Figuig, Djenien Bou Rezg and Ain Sefra lie at the northern limit of the Sahara. The surrounding mountains and the mass of the Hauts Plateaux to the north bring extremely variable weather conditions throughout the winter months. This, and the frequent flooding of the local wadis due to precipitation and melting snow as far afield as the Middle and Great Atlas mountains, provide locally extensive areas of standing water. Insect life is abundant and the terrain topographically suited to stonechats. Merzouga is on one of several channels of the Oued Ziz, below where it emerges from its gorge on to the *hammada*.

Beni Abbes, Zaouira el Kbira, Timimoun, Beauprêtre, Gardaia and Touggourt are only six of many large oases, on the slopes of low escarpments and in shallow depressions, surrounding the Grand Erg Occidental and down the north-western edge of the Grand Erg Oriental. Watered by an unvarying abundance of spring water, from deposits mainly below the *erg*, they support large plantations of Date Palms *Phoenix dactylifera* in whose shade vegetables and cereals are cultivated. The salt marsh which forms at the lower edges of such palmeries is favourable to scattered clumps of *Ziziphus lotus* and belts of *Tamarix* spp., the former affording perches and the latter abundant insect food for wintering stonechats. Ouargla, in the intervening Oued Mya basin, is a large oasis bordering a permanent lake some


4°W
0°
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Spain
36 N
MEDITERRANEAN SEA
Alger
RIF Mts.
Morocco
TELLIAN ATLAS
Mid. ATLAS
HAUTS PLATEAUX
BERGUENT
JENANE KRATER
AFLOU
MESSAAD
Biskra
ZAATCHA
SAHARAN ATLAS
Laghouat
PLATEAU des DAIAS
TOUGGOURT
Ksar es Souk
BOUANANE
FIGUIG
AIN SEFRA
Gt. ATLAS
32 N
Boudenib
DEFILIA
DJENIEN BOU REZG
GARDAIA
BEAUPRETRE
Jbel SARHRO
ERFOUD
MERZOUGA
Bechar
OUARGLA
BENI ABBES
ZAOUIRA el KBIRA
Oued
Gd. ERG OCCIDENTAL
El Golea
Oued Mya
AIN TAIBA
TIMIMOUN
Gd. ERG ORIENTAL
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28 N
Adrar
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0 100 Kms. 200 300
100mm Isohyet
Northern Limit of Sahara
E. D. H. J. '71

The principle features of the northern-central and northern Algerian Sahara, in relation to the Hauts Plateaux and the Atlas ranges. Sites of wintering Stonechats, *Saxicola torquata* are named in bold captials. The unshaded area to the north of the Atlas Mountains is the fertile coastal plain and that to the south of the Hauts Plateaux is stony (*hammada*) desert. Unnamed circles represent wintering localities which are discussed in the text in relation to the nearest named town.

10 km. in length. Ain Taiba is a simple water-point 10 km. or more within the dunes of the Grand Erg Oriental.

The Hauts Plateaux offer neglibible hospitality to wintering stonechats except at well watered places like Berguent at the northern edge, and such southerly pockets of nomad and permanent cultivation as are represented at Aflou, Messaad and Biskra which enjoy locally higher rainfall due to the proximity of mountains. Jenane Krater lies in a narrow zone which is notable for its scattered *daias*, shallow, moist depressions containing *Pistacia atlantica* to a height of 10 m., in association with *Ziziphus lotus* and a low ground cover of annual plants.

In addition to abundant food, all the above sites provide the physical and topographical requirements of a stonechat's winter territory as defined by Johnson (1971). The frequent occurrence of pairs, holding well defined territories, indicates a simple extension of the wintering pattern of stonechats in western Europe, the Iberian Peninsula and coastal North Africa (Agatho 1961–62, Johnson 1961 and 1971 and Van Hecke 1965). K. D. Smith's data (*in litt.*) record substantial incursions from the main wintering population (within and to the north and west of the Atlas mountains), singly and in pairs, into the fertile upland valleys and gorges intersecting the southern slopes of the Atlas *massif* between Ksar-es-Souk and Quarzazate, 30° 55′ N: 6° 54′W., and among the cultivation below the foothills at the western end of the Hauts Plateaux.

From my own observations, only two males were found to be in the advanced state of plumage associated with the dense wintering populations of the southern Iberian Peninsula (Johnson 1971). In common with other European passerine species, there is a suggestion of a correlation between the number of stonechats wintering in the Sahara and the early onset of cold weather in continental Europe. In view of the late date of 12th April, for Hartert's bird on the Oued Mya, the possibility of breeding cannot altogether be ruled out, as I have found newly hatched young, in north-east Morocco, on 30th March.

The regular pattern presented by these observations indicates that penetration of the western Sahara by the stonechat in winter is by no means as rare as was formerly supposed, to a distance of up to 500 km. from its northern edge. Moreover, with our knowledge of the winter behaviour and requirements of the species, it is reasonable to expect that stonechats will be found wintering in other, intervening oases and possibly in the belt of admirably suitable habitat which exists in the almost unbroken line of palmeries still further south, between Adrar, 27° 52′ N: 0° 17′ W., and Reggane, 26° 43′ N: 0° 10′ E., although we have not yet seen them in the small area we have sampled. Heim de Balsac & Mayaud (1962) record one wintering European Stonechat *S. t. rubicola* in Senegal.

Summary: The wintering of stonechats *Saxicola torquata* in the northern and central Algerian Sahara, south-east Morocco and the Hauts Plateaux is discussed. A regular pattern of observations emerges along the northern limit of the Sahara and in the oases surrounding the Grand Erg Occidental and to the west of the Grand Erg Oriental; representing a penetration of up to 500 km. into the Sahara proper. Birds were frequently paired and holding winter territories.

References:

Agatho, Br. 1960–61. De Roodborsttapuit (*Saxicola torquata rubicola* L.) Een onderzoek naar zijn leef wijze en broed biologie. *Publikaties van het Natuurhistorisch Genootschap in Limburg, Reeks XII:* 97–175.

Blondel, J. 1962. Migration prénuptiale dans les Monts des Ksours. *Alauda* 30: 1–29.

Dupuy, A. 1969. Catalogue ornithologique du Sahara algérien. *L'Oiseau* 39: 140–160, 225–241.

Gaston, A. J. 1970. Birds in the Central Sahara in winter. Part I. *Bull. Brit. Orn. Cl.* 90: 53–60.

Heim de Balsac, H. and Mayaud, N., 1962. *Oiseaux du nord-ouest de l'Afrique*. Paris: Lechevalier.

Johnson E. D. H., 1961. The pair relationship and polygyny in the Stonechat. *British Birds* 54: 213–225.

Johnson, E. D. H., 1971. Observations on a resident population of Stonechats in Jersey. *British Birds* 64: 201–213, 267–278.

Quézel, P. 1965. *La vegetation du Sahara.* Paris: Masson.

Smith, K. D. 1965. On the birds of Morocco. *Ibis* 107: 493–526.

Van Hecke, P. 1965. The migration of the western-European Stonechat, *Saxicola torquata* (L.) according to ringing data. *Gerfaut* 55: 146–194.

(The cost of reproduction of the map in the above paper was borne by the author—Ed.)

A Green-backed Heron with red soft parts

by D. R. Calder

Received 7th June, 1971

Records of Ardeidae with their soft parts coloured red or pink occur sporadically in the literature involving a number of species. As the records are not numerous, it may be as well to record an instance from Port Shepstone, Natal, South Africa on 29th September 1951. I was rowing on the Umzimkulu River near the town, when a Green-backed Heron *Butorides striatus* flew suddenly from the fringing trees out over the river, passing behind the boat before turning upstream and overtaking. Although I was without binoculars the bird was close enough for me to see that the bill, legs and feet were bright red, a feature that I have never otherwise observed in this species. This has been recorded however in Surinam by Haverschmidt (*Ibis*, 1953 : 699) and for records from the Kariba Lake and Aldabra Atoll see Benson & Penny (*Phil. Trans. R. Soc.* B 260, 1971 : 447). The phenomenon appears to be a temporary one, related to the onset of breeding.

Sexual size dimorphism in *Alauda razae*

by P. J. K. Burton

Received 18th June, 1971

Selander (1966) has reviewed the occurrence of sexual dimorphism in size among birds, and shows that this is often well marked in insular species; further evidence is contained in the paper by Bock (1970). It is worth drawing attention to a particularly good example of this phenomenon which has apparently not been previously noticed as such. The species concerned is the lark *Alauda razae*, which is confined to the islet of Razo in the Desertas group of the Cape Verde Islands. Meinertzhagen (1951) remarks on the long bill of this bird, and suggests that it is adapted for digging, but does not comment on sexual dimorphism in bill length; Alexander (1898) and Bannerman & Bannerman (1968) list male and female measurements separately, but without comment. The extent of dimorphism is, in fact, of considerable interest, since it is in marked contrast to other members of the genus, and, apparently, most other larks. Bill length shows the greatest dimorphism, and this was clearly apparent even from visual inspection of the series of *A.razae*. A bill length difference between the sexes of 20.66% was found in *A.razae* as against 3.45% in *A.gulgula* and probably little more in *A.arvensis* (inspected but not measured). In *Galerida cristata*, which is probably a close relative (Hall 1963), the difference found was 3.34%. There was no overlap between the sexes in *A.razae* in any of the measurements (bill, wing or tarsus) taken.

I agree entirely with Hall (1963) in her transfer of *razae* to *Alauda*. Nevertheless, the comparison would probably still hold good if de Naurois (1969) were correct in his view that *Pseudalaemon fremantlii* is the closest relative of *A.razae*. Few skins of this species were available, but out of seven specimens of *P.f.fremantlii*, the two females (mean bill 19.25) fell within the range of the five males (mean bill 18.32), and of eight *P.f.megaensis*, the three female measurements (mean bill 16.93) were also within the range of the five males (mean bill 17.72). Although more measurements are clearly desirable, it is evident that males and females overlap substantially in size, and are unlikely to differ by a large amount. Inspection of a wide range of other larks (including several insular races) has failed to reveal any others showing obvious strong sexual dimorphism in bill length with the notable exception of the Spike-heeled Lark (*Certhilauda albofasciata*) and Long-billed Lark (*C.curvirostris*) of southern Africa. Size dimorphism of the two latter species is well known and exceeds that of *A.razae*; bill length difference in a short (6♂, 4♀) series of *C.curvirostris* measured was 24.53%. Since *Certhilauda* species inhabit a continental land mass, their dimorphism has presumably evolved in a different way from that in *A.razae*.

Alauda razae is an inaccessible bird, with a small population. Nevertheless, should the opportunity occur, it would be interesting to carry out field observations on foraging behaviour in this species, to clarify the difference in feeding ecology between the sexes. (Field work seems equally desirable for the two *Certhilauda* species, although in this case, breeding biology may be the crucial aspect).

Details of measurements taken are given in the table below; bills were measured from the feathers, and wings pressed flat to give maximum chord. Percentage differences were calculated on the basis that the mean for the larger sex = 100%. In all cases but one, the male measurements were larger.

Measurements of *Alauda razae*, *A.g.gulgula* and *Galerida cristata*

		♂			♀			
Species and number measures		Mean	Standard deviation	Standard error of mean	Mean	Standard deviation	Standard error of mean	Percentage difference
A. razae 12♂ 10♀	Bill	14.86	0.88	0.25	11.79	0.39	0.13	20.66
	Wing	82.84	1.15	0.33	75.80	2.40	0.80	8.50
	Tarsus	21.14	0.65	0.19	19.14	0.44	0.15	9.46
A.g.gulgula 32♂ 32♀	Bill	12.47	0.72	0.13	12.04	0.71	0.13	3.45
	Wing	87.81	3.59	0.64	84.03	3.14	0.55	4.30
	Tarsus	23.36	1.31	0.23	23.42	1.06	0.19	0.26 (♀ larger)
Galerida cristata 17♂ 17♀	Bill	16.19	0.77	0.19	15.65	0.86	0.21	3.34
	Wing	103.82	2.79	0.70	98.60	1.87	0.47	5.03
	Tarsus	24.69	0.85	0.21	24.65	0.84	0.21	0.16

References:

Alexander, B. 1898. An Ornithological Expedition to the Cape Verde Islands. *Ibis* (7) 4: 74–118.

Bannerman, D. A. & Bannerman, W. M. 1968. *History of the birds of the Cape Verde Islands*. (*Birds of the Atlantic Islands*. Vol. 4). Edinburgh: Oliver & Boyd.

Bock, W. J. 1970. Microevolutionary sequences as a fundamental concept in macroevolutionary models. *Evolution* 24: 704–722 .

De Naurois, R. 1969. Notes bréves sur L'avifaune de L'Archipel du Cap-Verte. Faunistique, endémisme, écologie. *Bull. Inst. Fond. Afr. Noire* Sér. A. Sci. Nat. 31: 143–218.

Hall, B. P. 1963. The status of *Spizocorys razae* Alexander. *Bull. Brit. Orn. Cl.* 83: 133–134.

Meinertzhagen, R. 1951. Review of the Alaudidae. *Proc. Zool. Soc. London* 21: 81–132.

Selander, R. K. 1966. Sexual dimorphism and differential niche utilisation in birds. *Condor* 68: 113–151.

Additional non-passerine bird weights from East Africa

by P. R. Colston

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Britton (1970) has supplied over 1,000 weights for some 223 species, the majority from Kenya. Additional weights are presented here, and may be used in conjunction with Britton's data, and also those of Liversidge (1968), Britton & Dowsett (1969), Brooke (1969), and Dowsett (1970), mostly from southern Africa.

This paper lists 66 weights of 39 species made by the author while collecting specimens for the British Museum (Natural History) in March–June 1970 in Kenya. A few wintering palaearctic birds are included. I have many more data on passerine birds, to be published in due course. Approximately half of the collection was made into study skins, the rest preserved in spirit as anatomical specimens, indicated by fl. (= in fluid), and sometimes sexed from obvious external appearance. Age is not mentioned except for birds in immature plumage (imm.) and juveniles (juv.). All weights are in grammes. Order and nomenclature follow White (1965). Co-ordinates for less well known localities are as follows:—

Kakamega, 0° 15′ N., 34° 50′ E.; Lake Kanyaboli, 0° 03′ N., 34° 10′ E.; Lokori, near Kangetet, south Turkana, 1° 58′ N., 36° 06′ E.; Ng'iya, 0°03′ N., 34° 02′ E.; Ukwala, 0° 11′ N., 34° 12′ E.; Usengi, 0° 04′ S., 34° 02′ E.

Bostrychia hagedash: 1270, fl.; Ukwala, March.
Polihierax semitorquatus: ♂ 53; Lokori, May.
Numida meleagris: ♂♂ 1190, 1320; ♀ 1330; Lokori, May.
Guttera pucherani: ♂ 1190; Sokoke, April.
Vanellus crassirostris: 162, 191, both fl.; Usengi, March.
Charadrius tricollaris: 32, 34, both fl.; Lokori, May.
Charadrius marginatus: ♂ 33; ♀ 36; Mida Creek, near Malindi, April.
Tringa glareola: 72, fl.; Mida Creek, near Malindi, April.
Pterocles lichtensteinii: ♂ 206; ♀♀ 200, fl., 202, 216; Lokori, May.
Oena capensis: ♂ 37, fl.; Lokori, May.
Turtur chalcospilos: ♂ 64; 58, fl.; Sokoke Forest, Lokori, April/May.
Clamator jacobinus: 86, fl.; Lokori, June.
Cuculus poliocephalus: ♂ 59; 62, fl.; Sokoke, April. The male was very fat, the other one in the hepatic phase. In all probability both are the nominate form. For the most recent discussion of the forms known from Africa, see Benson *et al.* (1970).
Chrysococcyx caprius: ♀ imm. 35; imm. 38, fl.; Lokori, May.
Otus ireneae: ♂ 50; Sokoke, April.
Caprimulgus e. europaeus: ♀ 60, fl.; Kolifi, April.
Caprimulgus pectoralis: ♂ 48; ♀♀ 33, 44; 50, fl.; Sokoke, April.
Caprimulgus clarus: ♀ 47; 40, fl.; Lokori, May.
Colius striatus: 53, 59, 60, all fl.; Nairobi, Lokori, Lake Kanyaboli, March/May.
Ceyx picta: ♀ 12; 11, fl.; Sokoke, April.
Halcyon leucocephala: ♂ 43; Lokori, May.
Merops albicollis: imm. 21; Lokori, May.
Merops pusillus: 12, fl.; Lokori, May.
Upupa epops: 58, fl.; Lokori, June.
Tockus deckeni: ♀ 142; Lokori, May.
Phoeniculus minor: 30, fl.; Lokori, May.
Phoeniculus cyanomelas: ♂ 36; Mida Creek, near Malindi, April.
Lybius leucocephalus: 67.5, fl.; Ng'iya, March.
Lybius melanocephalus: 20, 21; Lokori, May.
Lybius lacrymosus: 20, fl.; Ng'iya, March
Pogoniulus pusillus: ♀ 10; Lokori, May.
Pogoniulus bilineatus: ♂♂ 12, 11; ♀ 13; Mida Creek, near Malindi, Kakamega, April/June.
Trachyphonus purpuratus: ♀ 70; Kakamega, June.
Trachyphonus darnaudii: ♂ 30; 29, 32, both fl.; Lokori, May.
Trachyphonus erythrocephalus: ♂ 56; ♀ 55; 54, fl.; Lokori, May.
Indicator indicator: ♀ 59.5, fl.; Lake Kanyaboli, March.

Prodotiscus insignis: ♀ 13; Kakamega, June.

Campethera nubica: ♂♂ 58, 59; ♀ 55; Lokori, May.

Dendropicos fuscescens: ♂ 26; ♀♀ 19.5, 20; Lokori, May.

References:

Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. Stuart. 1970. Notes on the birds of Zambia. *Arnoldia* (*Rhodesia*) 4(40).

Britton, P. L. 1970. Some non-passerine bird weights from East Africa. *Bull. Brit. Orn. Cl.* 90: 142–144, 152–154.

Britton, P. L. & Dowsett, R. J. 1969. More bird weights from Zambia. *Ostrich* 40: 55–60.

Brooke, R. K. 1969. Bird weights (letter). *Ostrich* 40: 217.

Dowsett, R. J. 1970. A collection of birds from the Nyika Plateau, Zambia. *Bull. Brit. Orn. Cl.* 90: 49–53.

Liversidge, R. 1968. Bird weights. *Ostrich* 39: 223–227.

Distributional notes on some Uganda birds

by Clive F. Mann

Received 16th April, 1971

Introduction

The following list contains observations on a number of species of birds in Uganda from 1964 to the present year. In some cases the observation constitutes the first record of the form for Uganda. In other cases they are of species which have been recorded only a few times in that country, in some, extending the known ranges. I have also included a few species which were not recorded for Uganda in Mackworth-Praed & Grant (1957, 1960), or White (1962, 1965) even though they are recorded in earlier works.

For various reasons no collecting was done, and the list contains sight records only. However, only those species that were identified, beyond any reasonable doubt, from field notes are included.

The approximate co-ordinates of all localities are given with the first reference to each locality.

Systematic List

Accipiter rufiventris, Rufous Sparrowhawk: A small party attending a grass fire south of Kitgum, Acholi District, 3° 0′ N., 32° 50′ E., in early January 1966. The only other records I can trace are as follows: one obtained near Kampala, 0° 40′ N., 32° 44′ E., 8th February, 1940 (Hopkins 1946); two specimens from the Impenetrable Forest, 0° 49′–1° 8′ S., 29° 35′–29° 50′ E. (Keith *et al.* 1969); sight records of 1–2 at Mbarara, 0° 35′ S., 30° 35′ E., November 1969 and September–October 1970 (E. N. Waterhouse and G. N. Harrington, *Uganda Society Bird Newsletter*, Nos. 4, 13 and 14, 1970).

Aquila rapax orientalis, Steppe Eagle: Mt. Kadam, Karamoja District, 1° 50′ N., 34° 45′ E., an *Aquila* seen feeding on termites at the foot of the mountain in March 1967 was photographed by me and identified from the slide by L. H. Brown. This is a common migrant in Kenya, but does not appear to have been previously recorded in Uganda.

Hieraaetus dubius, Ayres's Hawk Eagle: Budongo Forest, 1° 45′ N., 31° 35′ E; two immature birds, mid-December 1969 and an adult 19th August, 1970. Friedmann & Williams (1968) state that a specimen was obtained in Kibale Forest, 0° 40′ N., 30° 20′ E., in 1966 and another was obtained in Bwamba Forest, 0° 50′ N., 30° 10′ E. in 1967. They also quote a sight record by Williams in Budongo Forest in 1966. Jackson (1938) gives one record for Uganda, at Entebbe, 0° 4′ N., 32° 20′ E. These are apparently the only records for Uganda.

Falco alopex, Fox Kestrel: Between Kaabong and Kidepo, N. Karamoja, ca. 3° 45′ N., 34° 15′ E.; one seen on 5th, January 1966. Iriri, S. Karamoja, 2° 15′ N., 34° 10′ E.; one in early May 1966. Williams (1967a) has this species on his list for Kidepo National Park (N. Karamoja), but I can trace no other Ugandan records.

Falco rupicoloides, White-eyed Kestrel: S. Karamoja, ca. 2° 15′ N., 34° 20′ E; two together on 15th September, 1965. This species is known from western Kenya in similar habitat, i.e. open *Acacia* bush country. The first record for Uganda.

Falco vespertinus, (Western) Red-footed Falcon: Moroto, Karamoja, 2° 35′ N., 34° 43′ E., three males together in early May 1966. This species is known to the west and south on migration, as well as in Kenya, but had not previously been recorded in Uganda.

Eupodotis senegalensis, White-bellied Bustard: One seen between Kotido and Kaabong, N. Karamoja, ca. 3° 20′ N., 34° 10′ E., on 5th January, 1966. Jackson (1938), Friedmann (1966) and Williams (1967a) record this species from Karamoja. Capt. C. R. S. Pitman (*in litt.*) states that it is well-known in Karamoja. However, it is not given for Uganda in Mackworth-Praed & Grant (1957) nor White (1965).

Tringa erythropus, Spotted Redshank: Three together in Queen Elizabeth National Park at 1° 50′ N., 30° 0′ E., on 16th December, 1969. Williams (1967a) states "Uncommon visitor to Kenya and Uganda . . ." and has it on his list for the above locality. White (1965) mentions that it is recorded from Lake Edward, but omits to say whether Congo Kinshasa or Uganda. The only other documented record I can find for Uganda is one at Kajansi, near Kampala on 31st January and 18th February, 1971, observed by R. Frankum and P. Hamel (*Uganda Society Bird Newsletter*, No. 18, 1971).

Larus ichthyaetus, Great Black-headed Gull: Entebbe, Lake Victoria, an immature with a mixed flock of *L.fuscus* and *L.cirrocephalus* offshore on 1st May, 1966. White (1965) states that it is a rare palaearctic migrant to the Red Sea coast of Africa. Since this appears to be the first inland record for Africa it seems advisable to add a field description. In size it was noticeably larger than *L.fuscus*. Wings and mantle grey with some brownish mottling; primaries blackish; head mottled white and grey. Tail and underparts white, former with a broad black terminal band. Leg and bill colour could not be ascertained because of poor light, but latter was thought to be pale.

Apus myoptilus, Scarce Swift: One seen with *Cypsiurus parvus* at Laropi, Madi District, 3° 35′ N., 31° 45′ E., on 23rd August, 1970. There are only three previous records for Uganda: Impenetrable Forest and Kisoro, Kigezi District, ca. 1° 15′ S., 29° 40′ E. (Keith 1968), and Mt. Moroto (Friedmann 1966)

Chaetura cassini, Cassin's Spinetail: A small party was seen with *C.sabini* for a few days in December 1969, and again on 18th and 19th August, 1970, in the north-eastern part of Budongo Forest. The only other record I can find for Uganda is in Keith (1968), who met with this species, also with *C.sabini*, in Budongo Forest in October 1963, but failed to secure a specimen.

Chaetura ussheri, Mottle-throated Spinetail: Two seen together in Mabira Forest, East Mengo District, 0° 20′ N., 33° 0′ E., on 28th February, 1971. This record extends the known range in Uganda considerably, since it was previously known only from three other localities: Kiblea Forest and Bwamba Forest (Friedmann & Williams 1968) and the Impenetrable Forest (Keith *et al.* 1969).

Coracias naevia, Rufous-crowned Roller: Widespread in Karamoja District, but whether or not it is resident I could not ascertain. Although Mackworth-Praed & Grant (1957) and White (1965) do not give this species for Uganda, it is mentioned as occurring there in a number of works. Sclater (1924) gives northern Uganda as part of its range; Jackson (1938) gives localities in Karamoja, Madi, and Acholi Districts; both Friedmann (1966) and Williams (1967a, 1967b) record it from Karamoja. Capt. C. R. S. Pitman (*in litt.*) saw this species in East Madi (N. W. Acholi District), near the Sudan border, in April 1950.

Apalis rufifrons, Red-fronted Apalis: One seen between Iriri and Kang'ole, ca. 2° 20′ N., 34° 25′ E., in November 1965. This is a dry *Acacia* bush species, recorded by Jackson (1938) and Hall & Moreau (1970) from Turkana, the neighbouring district of Kenya. I have also observed it in similar habitat and at approximately the same altitude, i.e. ca. 1400 metres a.s.l., in Samburu District, Kenya. This appears to be the first record for Uganda.

Oenanthe pleschanka (=*O.leucomela*), Pied Wheatear: Widespread in Teso and Karamoja Districts from October to February. Another species not mentioned as occurring in Uganda by Mackworth-Praed & Grant (1960) or by White (1962). Jackson (1938) gives a record from Karamoja and another from near Masaka, ca. 0° 25′ S., 31° 40′ E. Williams (1967a) has it on his list for Kidepo National Park.

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References:

Friedmann, H. 1966. A contribution to the ornithology of Uganda. *Bull. Los Angeles County Mus. Nat. Sci.* No. 3.

Friedmann, H. & Williams, J. G. 1968. Notable records of rare or little-known birds from western Uganda. *Rev. Zool. Bot. Afr.* 77: 11–36.

Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation in African passerine birds*. London: British Museum (Nat. Hist.).

Hopkins, G. H. E. 1946. Some recent Uganda bird records. *J. E. Afr. Nat. Hist. Soc.* XIX (3 & 4).

Jackson, F. J. 1938. *The Birds of Kenya Colony* & *Uganda Protectorate*. London: Gurney & Jackson.

Keith, Stuart. 1968. Notes on the birds of East Africa, including additions to the avifauna. *Amer. Mus. Novit.* No. 2321.

Keith, S., Twomey, A., Friedmann, H. & Williams, J. 1969 The avifauna of the Impenetrable Forest, Uganda. *Amer. Mus. Novit.* No. 2389.

Mackworth-Praed, C. W. & Grant, C. H. B. 1957. Vol. I (2nd ed.) & 1960. Vol. II (2nd ed.). *The birds of eastern and north-eastern Africa*. London: Longmans, Green.

Sclater, W. L. 1924. Vol. I. *Systema Avium Ethiopicarum*. London: B.O.U.

White, C. M. N. 1962. *A revised check-list of African shrikes, etc.* Lusaka: Govt. Printer.

White, C. M. N. 1965. *A revised check-list of African non-passerine birds*. Lusaka: Govt. Printer.

Williams, J. G. 1967a. *A Field Guide to the National Parks of East Africa*. London: Collins.

Williams, J. G. 1967b. (2nd ed.). *A Field Guide to the Birds of East & Central Africa*. London: Collins.

Variation in *Caprimulgus tristigma* Rüppell, especially in West Africa

by R. H. Parker & C. W. Benson

Received 29th April, 1971

General

This note has been prompted by the collection of an unusually pale specimen of the rock-dwelling nightjar, *Caprimulgus tristigma* Rüppell, near Iseyin, Western State, Nigeria. It was found in the Department of Zoology, University of Ibadan, by R. H. P., who sent it to C. W. B. for presentation to the British Museum (Natural History) and study of its subspecific status. This could only be done against a background of variation in the species as a whole.

White (1965: 206–207) has given a summarised account of the three subspecies (*tristigma*, *lentiginosus*, *sharpei*) and their characters, which is in general satisfactory. But for southern Africa he recognised only *C.t.lentiginosus*. There is no doubt that Clancey (1965: 345) was justified in separating *granosus*. It is darker and greyer above than *lentiginosus*, lacking the buffy or vinaceous tones, and decidedly less buffy below. Clancey also suggests that *granosus* is larger. But the four males of *lentiginosus* which he had may have been exceptionally small individuals, their wings measuring 177 – 181 mm. only, whereas the two incorporated in the Table below measure 190, 192 mm. We could find no sexual dimorphic significance in the wing-lengths of the 93 specimens examined and therefore have grouped the sexes together in the Table for clarity. Males have the tips of the two outer pairs of retrices white for about 40 mm., whereas in females they are freckled. White tips are present even in juvenile males (Jackson, *Arnoldia*, *Rhodesia* 5(12), 1971:3). Bannerman (1933: 156) also claims that the white spots on the inner webs of the four outer primaries are smaller in females, but this does not seem an altogether reliable character for distinguishing the sexes.

Table

Wing-lengths of the material examined of *Caprimulgus tristigma*, in millimetres

	Specimens	*Range*	*Mean*
S. W. Africa (*C.t.lentiginosus*)	2♂♂; 7♀♀	178 – 196	(188.6)
Eastern Transvaal (*C.t.* near *granosus*)	5♂♂; 5♀♀	184 – 195	(187.1)
Rhodesia, Malawi, Congo, and Tanzania, south of 8° S. (*C.t. granosus*)	11♂♂; 10♀♀	182 – 196	(188.2)
Tanzania north of 5° S., Ruanda, north-eastern Congo (Upper Uele), Uganda, Kenya (*C.t.tristigma*)	17♂♂; 11♀♀	168 – 187	(177.6)
Ethiopia, southern Sudan (*C.t.tristigma*)	6♂♂; 3♀♀	172 – 183	(179.4)
Central African Republic, Cameroun (*C.t. sharpei*)	4♂♂; 1♀	167 – 182	(174.6)
Nigeria	3♂♂; 1♀; 1 sex ?	178 – 184	(182.2)
Togo, Ghana, Mali, Guinea (*C.t. sharpei*)	4♂♂; 2♀♀	165 – 178	(172.1)

The range of *granosus* may be taken as from north-eastern Botswana, Rhodesia and Mozambique north of the Save River, north to southern Tanzania, the southern Congo, and possibly Angola (no material was apparently available to Clancey from the latter country, nor to us). Clancey only definitely placed the area from the western Cape north to South-West Africa as within the range of *lentiginosus*, and thought that birds from the eastern Cape north to the Transvaal might be separable as darker and browner than *lentiginosus*. The only material from this area available in the present study has been 10 specimens from the eastern Transvaal (Zoutpansberg, Legogot, Rustenburg). On the upperside they are not separable from *granosus*, but on the underside seem intermediate. With this reservation we place them as near *granosus*.

The figures in the Table indicate that the material placed with nominate *tristigma* averages smaller in size than *lentiginosus* or *granosus*, and that *sharpei* averages smaller still. As to colour, *lentiginosus* is the most distinctive. Nevertheless, on average, nominate *tristigma* is distinguishable from *granosus* in being not so grey. Some specimens (in the British Museum) show a tendency to rufous, this being best marked in two from Kenya (Laikipia), and in all nine from Ethiopia and the Sudan. Again, on average, *sharpei* is without doubt the darkest, even though it is possible to pick out the odd specimen which matches an unusually dark *granosus*. No specimen of *sharpei* showing any tendency to rufous has been seen.

The Nigerian specimens

Thus we arrive at the point where there are four recognisable forms which already bear names. Five specimens from Nigeria remain for discussion. They constitute a fifth recognisable form which may be known as:

Caprimulgus tristigma pallidogriseus, subsp. nov.

Diagnosis: Paler grey than any of the foregoing forms, in especially strong contrast to *sharpei*, the darkest. Like *granosus*, nominate *tristigma* and *sharpei* lacks the buffy tones of *lentiginosus*. Larger than *sharpei*, wing (both sexes) 178 – 184 as against 165 – 182 mm. (see table).

Type: In the British Musuem (Natural History), registered number 1971. 3. 1. ♀, 22nd May, 1961, Upper Ogun Estate, 15 miles north of Iseyin, Western Region, Nigeria, 8° 10′ N., 3° 35′ E. Collector F. C. Sibley.

Measurements and weight of type: Wing 183, tail 123mm. Weight 69g.

Material examined: In addition to the type, the following are particulars of two further specimens of *pallidogriseus* and their collectors, found in the British Museum:

♂, 6th September, 1962, Sha, Nigeria, 4,100 feet, 9° 10′ N., 8° 50′ E. R. G. Newell (Imperial College Nigeria Expedition). Wing 184 mm.

♂, 28th October, 1951, Jos, Nigeria, 4,000 feet, 9° 55′ N., 8° 53′ E. R. E. Sharland. Wing 182 mm'

A wing of a fourth specimen collected on 7th November, 1960 by P. Blasdale at Kari, 10° 45′ N., 9° 00′ E. (not the locality of the same name at 11° 20′ N., 10° 33′ E.), has been made available by Dr. C. H. Fry, and with Mr. Blasdale's consent presented to the British Museum. Its relatively pale colour indicates that it is best placed with *pallidogriseus*. Its length is 178 mm.

A fifth specimen considered referable to *pallidogriseus* was caught in a mistnet, and released, by J. Broadbent at Oyo New Reservoir, Western State, Nigeria, 7° 50′ N., 3° 55′ E., 24th December, 1969. A coloured slide, a copy of which has been deposited in the British Museum, shows it to be a very pale grey, while its wing-length was recorded as 184 mm. The outermost rectrices were noted as having large white tips, indicating that it was a male. It weighed 100 g, thus much heavier than the type, though a specimen from Moroto, Uganda (presumably nominate *tristigma*) weighed 87 g (Britton, *Bull. Brit. Orn. Cl.* 90, 1970: 144). Surprisingly, Verheyen (*Expl. Parc. Nat. Upemba*, 1953: 382) gives still smaller figures, viz. 67, 77, 78, 82 g, for five specimens of the relatively large *granosus* (recorded by him as *lentiginosus*) from the southern Congo.

Details of specimens of *sharpei* examined, in elaboration of the information in the Table are:

(a) In British Museum

Central African Repbulic: ♂, 17th October, 1905, Mt. Kaga Djirri, Kemo River, 5° 45′ N., 18° 46′ E. Boyd Alexander. Type of *C. goslingi* Alexander (*Bull. Brit. Orn. Cl.* 19, 1907: 47). As already correctly pointed out by Bannerman (1933: 156), *goslingi* is a synonym of *sharpei*.

Cameroun: ♂, 19th July, 1948, Ndop, 30 miles east of Bamenda; ♀, 11th September, 1948, 25 miles east of Bamenda. Co-ordinates for both given as 5° 55′ N., 10° 10′ E. W. Serle. ♂, 19th August, 1906, Ebolewo, 3° 00′N., 11° 10′ E; ♂, 26th November, 1924, Bitye, 3° 10′ N., 12° 20′ E. G. L. Bates. Ghana: 2 ♂♂, 18th February and 11th March, 1901, Gambaga, 10° 31′ N., 0° 28′ W. Boyd Alexander. The February specimen is the type of *sharpei*. Mali: ♀, 10th July, 1928, Kulikoro, 12° 55′ N., 7° 30′ W. G. L. Bates.

(b) In Koninlijk Museum voor Midden-Afrika, Tervuren

Togo: ♂, ♀, 26th August, 1968, Aledjo, 9° 25′ N., 1° 30′ E. A. De Roo (Joint Expedition of the Rijksuniversitaire Centrum van Antwerpen and the Kononklijk Museum voor Midden-Afrika, Tervuren, promoter Prof. Dr. W. N. Verheyen).

(c) In Muséum National d'Histoire Naturelle, Paris

Guinea: ♂, 9th October, 1926, Kindia, 10° 0′ N., 12° 48′ W. Dr. Gronnier. The palest specimen in this series is the female from Bamenda, but even so it is darker than any of those of *pallidogriseus*.

We had originally considered using the name *pallidus* rather than *pallidogriseus*. But we have refrained from doing so in view of *C.pallidus* Severzow (*Journ. Ornith.*, 1875: 179, 198), which according to Hartert (*Cat. birds Brit. Mus.* 16, 1892: 529) is a synonym of *C.europaeus unwini* Hume.

[*to be continued*]

27 AUG 1971

Bulletin of Zoological Nomenclature: Opinions

In continuation of *Bull. Brit. Orn. Cl.* 91, 1971: 60, and by permission of the International Trust for Zoological Nomenclature, the following Ruling is quoted as an extract from an Opinion published in *Bull. Zool. Nomencl.* affecting birds:

Opinion 938 *Bull. Zool. Nomencl.* 27 (3–4, 1970: 176)

(1) Under the plenary powers the generic name *Larius* Boddaert, 1783, is hereby suppressed for the purposes of the Law of Priority but not for those of the Law of Homonymy.

(2) The following generic names are hereby placed on the official List of Generic Names in Zoology with the Name Numbers specified:

(a) *Lorius* Vigors, 1825 (gender: masculine), type-species, by original designation, *Psittacus domicella* Linnaeus, 1758 (Name No. 1931);

(b) *Eclectus* Wagler, 1832 (gender: masculine), type-species, by designation by Gray, 1840, *Psittacus grandis* Gmelin, 1789 (Name No. 1932).

(3) The following species names are hereby placed on the Official List of Specific Names in Zoology with the Name Numbers specified:

(a) *domicella* Linnaeus, 1758, as published in the binomen *Psittacus domicella* (type-species of *Lorius* Vigors, 1825) (Name No. 2423);

(b) *roratus* Müller, 1776, as published in the binomen *Psittacus roratus* (Name No. 2424).

(4) The family group-name Loriidae (correction of Lorianae) Swainson, 1837 (type-genus *Lorius* Vigors, 1825) is hereby placed on the Official List of Family-Group names in Zoology with the Name Number 457.

(5) The generic name *Larius* Boddaert, 1783 (as suppressed under the plenary powers in (1) above) is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology with the Name Number 1986.

27 AUG 1971

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References to literature should be in the same format as in the notice to contributors to the *Ibis* (see any 1970 number). Considerations similar to those in the *Ibis* notice also apply in regard to nomenclature, scientific names of species and genera, and illustrations including photographs. But illustrations including photographs .can only normally be considered if the contributor is willing to pay for the cost of their reproduction.

Contributors introducing a new name or describing a new form should append *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In such a description, the introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further headings as required.

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CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, R. E. F. Peal, 24 Creighton Avenue, London N.10.

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Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 91 No. 5 Published: 20th October, 1971

The six hundred and seventy-second meeting of the Club was held at the Criterion in Piccadilly, London, S.W.1 on Tuesday, 21st September, 1971 at 7 p.m.

Chairman: Sir Hugh Elliott, Bt., O.B.E.; present: 17 members and 10 guests.

The speaker was Dr. C. H. Fry who addressed the Club on "African Ornithology by Hovercraft" and illustrated his address with coloured slides.

Variation in *Caprimulgus tristigma* Rüppell, especially in West Africa

By R. H. Parker & C. W. Benson

Received 29th April, 1971

(PART II)

Discussion

On present knowledge *pallidogriseus* is interposed geographically between *sharpei* to the west, from Togo to Guinea, and to the east, in Cameroun and the Central African Republic (incidentally, A. D. Forbes-Watson, pers. comm, did not find the species at Mt. Nimba, Liberia, during his extensive investigations in 1967-68).

The type of *pallidogriseus* is from the south-west extremity of Nigeria, about 120 miles from the coast, and the bird which was mist-netted at Oyo New Reservoir is from a little further south. However, Brown (*Ibis*, 1948: 532) records several observations of *C.tristigma* from Kabba Province and one still further south at Igarra in mid-western Nigeria (7° 18′ N., 6° 07′ E.). Brown's records, which come from an area about 100 miles east of the type locality, and which were all in the same month as the type's collection (May), include two breeding records and the collection of a male with "much enlarged testes". As he states, this specimen never arrived in the British Museum, nor are there any eggs therein from anywhere in West Africa. From his records Brown concluded that *C.tristigma* bred in Nigeria at the beginning of the rains (April-June). This, however, is not conclusive evidence that *pallidogriseus* is a breeding resident in Nigeria. It is possible that *sharpei* ranges through the humid southern part of the country, *pallidogriseus* occuring only as an off-season migrant. Its colour and large size suggest that it may breed in a relatively cold and dry climate, if indeed this holds good in the northern African tropics. Possibly it is a resident at Sha and Jos, at 4,000 feet or higher, and where rainfall is less than it is nearer the coast, but this is not supported by several of the specimens of *sharpei*, collected at a considerably higher altitude (viz. Bamenda, 5,200 feet), whilst another was collected from an area with a lower annual rainfall (Mali). It is obvious that further investigation is needed before an answer can be found to the problem. Bannerman (1933: 176) writes of a migration in a dry thorn-scrub breeding population of *Scotornis climacurus* (Vieillot), spending the off-season to the southward, such birds being probably absent from the coastal countries from July to November. It is true that the Iseyin and Oyo records, being for May and December, are in accord with this. But the breeding records for May at Kabba, and the fact that, using sight records from J. H. Elgood, C. H. Fry, P. Blasdale and R. E. Sharland, in addition to the specimens already mentioned, *C.tristigma* has been recorded in Nigeria in every month of the year except February and March, point to the likelihood that the species (and therefore *pallidogriseus*, like all other races) is sedentary. If this latter theory is correct, it would appear that *pallidogriseus* is restricted in range to the Jos Plateau in central Nigeria and the inselbergs that surround it in lowland savanna. It should, however, be added that there is no evidence that any of the five specimens were near breeding condition.

The possibility has been considered that the specimens of *pallidogriseus* might be merely non-breeding examples of *granosus* from southern Africa (they could not be *lentiginosus* if only because that form differs from all the others by its buffy tones). It is true that *Caprimulgus rufigena* Smith and *Macrodipteryx vexillarius* (Gould) breed in southern Africa, and spend the off-season north of the equator; see for example White (1965: 204, 208). But we are unaware of any evidence of such a long range movement in *C.tristigma*, although Tree (*Ostrich*, 1967: 191) presents evidence of some local movement in Zambia, and H. D. Jackson (pers. comm.) suspects that this may also apply in Rhodesia. To be sure, in the British Museum there is a specimen from Legogot, eastern Transvaal, and two from Chirinda, eastern Rhodesia, which approach *pallidogriseus* in colour. But, as already pointed out, there is some variabliity in colour, and these three specimens seem to represent the extremity of pallor in *granosus*. Another point is that the wing-lengths of the specimens of *pallidogriseus* are at the very minimum for *granosus* (see Table, and figures in Clancey, 1965: 345).

The status of *Scotornis trimaculatus* Swainson

Sclater (*Syst. Av. Ethiop.* 1, 1924: 251) uses the specific name *trimaculatus* Swainson for this nightjar, though (*op. cit.* 2, 1930: 856) considers it indeterminate, as does Bannerman (1933: 156). The majority of Swainson's bird specimens were received by the University Museum of Zoology, Cambridge, in 1840, and C. W. B. has found the specimen which Swainson (*Birds* W. *Afr.* 2, 1837: 70) seems to have had before him in describing *Scotornis trimaculatus*. The name on the original label, in Swainson's handwriting, is the same. The locality is given as Senegambia, but there is no date. The specimen, which is in excellent condition, shows no marked discrepancy from the description. It is in fact a male of *Caprimulgus r. ruficollis* Temminck (1820), of which *trimaculatus* is accordingly a synonym.

Incidentally, Bannerman (1933: 152) gives a West African record of *C.r. desertorum* Erlanger. The supporting specimen is in the British Museum, and there can be no question but that it was collected in West Africa (at Gambaga, Ghana). But there must be reservations in regard to the Swainson specimen of *C. r. ruficollis*. It is true that many specimens in his collection were almost certainly correctly labelled "Senegal", "Senegambia", "Sierra Leone", etc. On the other hand, it is to C. W. B.'s knowledge, since he is curating the University Museum collections, that a leaven of Swainson's specimens were incorrectly labelled. One particularly flagrant instance is the apparent type of the woodpecker *Hemicircus rubiginosus* Swainson, which is also in Cambridge. Swainson supposed that it came from "western Africa", but in fact it came from Malacca, in south-eastern Asia (Peters, *Check list birds world* 6, 1948: 225). Thus there cannot be absolute certainty that Swainson's specimen of *C. r. ruficollis* came from West Africa, and there is apparently no other record of this form therefrom.

Acknowledgements

We are grateful to Dr. D. W. Snow and his staff for allowing examination of the 68 specimens of *C.tristigma* in the British Museum (Natural History); to Dr. H. Schouteden and the late Dr. A. De Roo for the loan of 19 in the Koninklijk Museum voor Midden-Afrika, Tervuren; and to Dr. F. Roux for the loan of one from Guinea in the Muséum National d'Histoire Naturelle Paris. Two specimens in the University Museum of Zoology, Cambridge, from South-West Africa and the eastern Transvaal, were also used; also two from the latter area in the City of Liverpool Museums. C. W. B. is also grateful to Mrs. B. P. Hall for examining material with him. Dr. C. H. Fry has kindly commented on a draft of this paper.

References:

Bannerman, D, A, 1933. *The birds of tropical West Africa.* Vol. 3. London: Crown Agents for the Colonies.

Clancey, P. A. 1965. A catalogue of birds of the South African sub-region. Part 10. *Durban Mus. Novit.* 7(10): 305–388.

White, C. M. N. 1965. *A revised check-list of African non-passerine birds.* Lusaka: Govt. Printer.

[Postscript: Mackworth-Praed & Grant, *Afr. handbook birds*, Ser. III, Vol. 1, 1970, record *C. tristigma* in breeding condition in Nigeria in February. We do not know the source of this information.]

Euplectes diadematus Fischer and Reichenow; courtship, nest and eggs

by G. R. Cunningham-van Someren

Received 2nd June, 1971

According to modern standard works (see most recently Hall & Moreau 1970), *Euplectes diadematus* is restricted in distribution to north-eastern Tanzania and coastal Kenya. However, this can now be extended to a point considerably further inland to the westward, some 45 km south-west of Nairobi, on the road to Magadi, at ca. 1° 34′ S., 36° 29′ E.

To my knowledge *E. diadematus* has been resident for over thirty years in temporary rainwater swamps and areas of tall grass around this point on the Nairobi-Magadi road, at altitudes between 900 and 1000 m above sea-level. Although many attempts have been made to locate nests, I was not successful until 1971. In March/April 1970 a male was observed during three week-ends, once carrying grass, possibly part of courtship, territorial or nesting behaviour, but no nest was found.

On 23rd May 1971 (some six weeks later than in 1970, since production of suitable grass cover had been delayed, due to the lateness of the rains), three *diadematus* males were located, all closely associated with *E. orix* and *Quelea cardinalis*. The *diadematus* were watched at territorial and courtship display, males chasing females, the latter inspecting potential nest sites or building nests. On 29th May the territories were again inspected, and three nests of *diadematus* located. Each was placed in the top of a low herbaceous plant, in long grass. Unlike nests of *E. orix*, *afer* or *Q. cardinalis*, which are slung between two upright stems of herbaceous plant or grass, these *diadematus* nests incorporated all the twiggy stems of the plant, *Achryanthes aspera*. Each was an almost round ball, domed with a slight porch, high up at one side, constructed entirely of green grass blades, very loosely woven; far less material had been used than in the firmer nests of *orix* nearby. They measured ca. 10 cm from top to bottom, diameter ca. 8 cm..

Eggs, C/3 in each nest, measure 16.5 x 12.5 mm., and have a pale blue ground, lighter than the immaculate blue of *orix* but bluer than *afer*. They are lightly blotched and spotted with black and grey-black, with a clouded effect, and more concentrated around the large end and more heavily marked, than in eggs of *afer* taken near Nairobi, which are moreover larger, measuring 17.5 – 18 x 12.75 mm (van Someren 1949)

The foregoing is an addition to knowledge of the breeding of *E. diadematus*. According to Mackworth-Praed & Grant (1955) and Hall & Moreau (1970), the nest and eggs are unknown. They had, however, been described by Williams (1962), from the Tsavo National Park. Some observations can also be made on behaviour.

E. afer and *orix* are polygamous, but *diadematus* appears to be monogamous, as only a single female was ever seen with each male, and only a single nest was found in each territory. Courtship was similar to that of *orix*, with which territories overlapped. The male flitted regularly from one prominent shrub, herb or tree to another marking a territory, and repeatedly travelled back and forth when not chivying the female. He would fly to a site being inspected by his mate, where he would go through his courtship display. Perched, he would lower the head onto the breast to show the red crown, fluff up the long feathers on the back, and depress the tail, to resemble a black-and-yellow ball. Then bobbing slowly up and down, he would start wing-flicking. The wings, not fully expanded, were flipped outwards, more or less on a horizontal plane, not above the back. This wing-flicking was rapid, and accompanied by a rather indistinct low chirruping song impossible to reduce to writing. The male visited the female at each site inspected by her, and displayed. At one site she remained for several minutes pulling at grass-heads and trying to weave, and when the male displayed she responded with wing-flips, and he mounted her.

As far as could be ascertained from two days of observation the female did all the nest building. Although the male would visit the nest-site, he was not seen to assist in building as does the male of *orix*. In two territories there was considerable competition for nest sites with *Quelea cardinalis*. The *diadematus* female was often harassed or driven from potential nest sites by a male *cardinalis*, but the male *diadematus* was not seen to chivy the Quelea. At the other (third) site there was competition with *orix*. This was apparently because there were few herbaceous plants in the grassland suitable as nest sites and as look-out territorial stances for males. In this case territories overlapped, with one *diadematus* nest and two *orix* within a few metres of each other.

Acknowledgements. My thanks are due to C. W. Benson for his assistance in the finalisation of this note.

References:
Hall, B. P. & Moreau, R. E. 1970 *An Atlas of speciation in African passerine birds*. London: British Museum (Nat. Hist.)
Mackworth-Praed, C. W. & Grant, C. H. B. 1955 *African Handbook of birds*. Series I, Vol. 2. London: Longmans.
van Someren, G. R. Cunningham. 1949. *Euplectes taha* in Kenya. *Ibis* 91: 345–346.
Williams, J. G. 1960. An addition to our knowledge of *Euplectes diademata*. *Bull. Brit. Orn. Cl.* 82: 172–173.

Winter food of the Secretarybird as revealed by pellets

by R. K. Brooke & C. J. Hodgson

Received 7th July, 1971

No detailed studies of the food of the Secretarybird *Sagittarius serpentarius* south of the equator appear to have been made though there are many scattered observations to the more recent of which we draw attention. Brown & Amadon (1968) say:—

> "The staple food is small ground mammals and large insects, with some young birds, eggs and lizards, snakes and larger creatures up to the size of a young hare. . . . All prey is taken on the ground".

Our studies and the miscellaneous observations reported below support this general statement (subject to clarification of 'large') which we prefer to that of McLachlan & Liversidge (1970) (repeated from their 1957 work) who say:—

> "Insects including termites, wasps and their larvae, snakes, tortoises, young birds and any small animals it can kill".

Problems in the diet of Secretarybirds can be broken down into (a) what constitutes the soup fed by regurgitation to newly hatched nestlings (Brown 1955, Karmali & Karmali 1968); (b) what is brought in solid form to older nestlings; (c) what adults take for their own consumption, with or without seasonal or geographical variation. This paper draws together recently published data on food items, some unpublished data and the results of our study of pellets collected below winter roosts.

Van Someren (1956), writing about Kenya, gives the diet as snakes, lizards, rats, locusts, grasshoppers, beetles, nestling birds, cheepers, plovers' eggs and saturniid moth larvae scorched by veld fires. Brown (1955) reports that in Kenya regurgitated prey for the young includes mice, shrews, rats, a lizard, a hedgehog and many large grasshoppers. He adds that snakes and mammals are brought to the incubating female by her mate. Steyn (1961) in Rhodesia found on one visit to a nest ten lizards, one mouse and a young hare. More generally he adds snakes and francolins *Francolinus* spp. He also remarks "Almost all pellets opened contained the remains of locusts and these appeared to be a consistent part of their diet". It is not clear whether his pellets were regurgitated by adults or nestlings. The late K. W. Greenhow whose notebooks are in the National Museums of Rhodesia in Bulawayo (c.f. Vernon 1967) and who worked in Rhodesia commented on a nest found at Headlands on 19 December 1948 containing two eggs:—

> "Scattered about the rim were numerous large castings of matted mouse hair, small bones, scales (snakes?) and locusts legs. These pellets were some two inches long and cylindrical".

He also found pellets containing rodent fur and insect remains at Stapleford on 5 November. The late W. Krienke whose notebook dealing largely with eggs collected is in the Queen Victoria Museum in Salisbury found a nest of the Secretarybird near Beatrice on 24 July 1929 containing one nestling which he estimated to be a month old. Lying in the nest were a Yellow-billed Hornbill *Tockus flavirostris* and a black cobra *Naja* sp. Editor (1968) tells us that a Secretarybird on a golf course at De Aar in the northern Cape Province of South Africa ate a driven golf ball in July: an interesting pellet must have resulted. He adds that to a nest with young were brought various rodents, a lizard, a snake, large grasshoppers and a clutch of francolin eggs, all regurgitated whole. P. le S. Milstein (*in litt.* to R.K.B.) advises that he has found unidentified egg shells in Secretarybird pellets, and seen them take eggs of Helmeted Guineafowl *Numida meleagris* on several occasions, and at Allemanskraal in the Orange Free State the clutch of four of an Orange River Francolin *Francolinus levaillantoides*. Allen & Ansell (1966) record that a juvenile in captivity at Chipata in Zambia ate freely of rodents, dead snakes, strips of game meat and of Helmeted Guineafowl, but refused strips of meat of domestic stock from the butcher and also large Orthoptera. It was not seen to drink water which was always available. McLachlan & Liversidge (1970) include wasps and their larvae. This is based on Roberts (1940) who adds that these are from paper nests in trees and bushes. However this is not usual practice and should not have been included in a general statement without qualification.

In the Salisbury district of Rhodesia Secretarybirds are inclined to roost gregariously (up to five birds in one tree) in isolated large Acacias in grassland in winter. The Rhodesian breeding season is May to March with a peak in October (Rhodesian Ornithological Society nest record card collection). While roosting they regurgitate pellets which can be collected from the ground below. As noted by Greenhow quoted above these pellets are cylindrical and look like the object held in the bill of an adult photographed by Karmali & Karmali (1968). They vary greatly in length from c.30 to c.100 mm but the diameter varies little: four selected as apparent extremes vary 41–45 mm. Weight also varies, probably in proportion to the length: the heaviest weight noted for a furry pellet was 20 g. It is not known how often pellets are regurgitated or how long after consumption of the prey. Pellets were collected by R. K. B. on 13 June 1963, 2 August 1964, 4 June 1965, 12 August 1966, 17 October 1966, the last after the winter roost had been abandoned.

C. J. H., then of the Entomological Section of the Ministry of Agriculture, examined and analysed the pellets. The great majority of the pellets were basically composed of mammalian fur. These were broken up and dropped into a concentrated solution of magnesuim sulphate. This resulted in all the invertebrate remains and most of the fur floating to the surface while nearly all the bones and teeth sank to the bottom. The pellets of June 1963 were analysed in greater detail since they eventually proved to be an unusual collection, the results of which may be summarized:—

(1) Five grassy pellets

(i) Many mandibles of various Orthoptera were found. A count was made of the number in these pellets. Fifty were found, suggesting that at least 25 large grasshoppers (Catantopidae) had been eaten. As far as could be determined these belonged to the genera *Catantops*, *Cyrtocanthacris* and *Acanthacris*. There were also signs that other large grasshoppers and crickets were taken. Apart from the mandibles, portions of the jumping legs, the elytra, hind wings and the pronotum were noticeable.

(ii) Another insect group which appeared commonly was the Coleoptera: mostly Staphylinidae (subfamily Hybosorinae and Orphninae) with almost as many Tenebrionidae. A few Curculionidae were also found. The remains were from almost any part of the body as this order is very heavily scleratized.

(iii) Occasional Hemiptera were found: large members of the Pentatomidae, Coreidae and Reduviidae. The undigested portion was made up almost entirely of head capsules and thoraxes.

(iv) Other insect groups found were Isoptera: mostly workers, and Hymenoptera (Formicidae: mostly Dorylinae). All that remained of these was the thorax.

(v) There were portions of scleratized material which might have been part of large millipedes, but this is uncertain.

(vi) The lower jaws of some minute mammals were present. These appeared to be vole like, with a lower jaw of no more than $\frac{1}{4}$ inch long, so they must have been very small—perhaps they were immatures.

(vii) In some pellets there were a few stones, never exceeding one-fifth inch long and comprising never more than 0.5 % of a pellet.

(viii) The rest (about half) of these pellets were made up of plant material which appeared to be nearly all grass, though seeds of some other plants were noted. Practically all the material was too large to have come from the guts of Orthoptera eaten by the Secretarybirds.

(2) Six fur pellets

(i) These were composed of fur to the extent of 95 % of their volume. The fur was often long: an occasional tuft of an inch or more in length being found. The bony portions were made up of lower jaws which were all incomplete, and occasional vertebrae. The remains suggested that the jaws may have been $\frac{3}{4}$ inch long and contained teeth which were mainly of a herbivorous type. The bones probably belonged to rodents of the subfamily Otomyinae which occur freely round Salisbury.

(ii) Occasional insect remains were found, but they made up less than 1 % of the volume of the pellets.

(iii) The scales of at least one, and probably more than one snake were found.

(3) Mixed pellets

(i) These never had more than 20 % fur.

(ii) A few mammalian jaw remains were found.

(iii) A high percentage of plant matter occurred similar to (1) (viii) above.

These pellets show that while the substantial part of the diet had been small rodents, almost as much insect material and grass had been eaten. The five pellets consisting mostly of plant material also contained large numbers of larger grasshoppers and beetles, along with a variety of other insects, whereas this was not true of the fur pellets. P. Steyn (*in litt.* to R.K.B.) has found substantial grasshopper remains in fur pellets in a nest at Essexvale on 30 December.

There is no suggestion in the literature that the Secretarybird eats grass or other plant material as opposed to using tufts of grass for nest lining. It should be noted that all the stones were found in grass pellets and it is possible that they assist its essentially flesh-eating gizzard to extract nourishment from grass. It is well known that most gallinaceous birds, waterfowl and the Ostrich *Struthio camelus* take grit and small stones to help the gizzard break up their vegetable diet. But equally the grass may have been ingested to form the binding for pellets deficient in the normal binding of mammalian fur, though in this case the presence of stones is not explained except perhaps as an assistance in breaking up the harder exoskeletons of large invertebrates. C. J. Vernon (*in litt.* to R.K.B.) has found plenty of grass and seeds in pellets of the Barn Owl *Tyto alba* in southern Africa. This is almost invariably correlated with the presence of bones and teeth of the Pouched Mouse *Saccostomus campestris* in the pellets. But we have not been able to prove that this rodent is eaten by the Secretarybirds though it is likely enough. Neither does eating Pouched Mice explain the vegetable matter in pellets containing no mammalian fur. As noted above the grass remains were in many instances too large to have come from the gut of any orthopteran.

There were remarkably few remains of bones in furry pellets considering the quantity of fur present. This suggests that the digestive system of the Secretarybird is more destructuve than in, say, the Barn Owl, though less so than in the Grey Heron *Ardea cinerea* (P. le S. Milstein *in litt.* to R.K.B.). This might explain the absence of any reptilian remains apart from a few snake scales even though lizards which are common around Salisbury are probably freely eaten (c.f. Steyn 1961, Brown & Amadon 1968).

Thereafter no truly grassy pellets were found which suggests that there was some special reason for Secretarybirds to eat grass in June 1963. Fur pellets continued to show a poverty of bones and teeth. The following additional items of food were found:—

> Chelicera of a spider; a millipede; scorpions *Opisthophthalmus* sp., probably *O. carinatus* (Peters) (Dr. R. F. Lawrence *in litt.* to R.K.B.); Coleoptera—carapaces of *Renatiella* sp., Scarabaeidae and *Brachycercus congestus* Gerst; a few seeds including two maize pips; a few lizard or snake scales; grit; remains of grasshoppers (Acrididae), usually hind femurs over 20 mm long, hind wings, tibia and tarsus heads, mandibles and elytra.

In June 1963 a long, headless snake about three-quarters eaten was found caught up in a wild Asparagus bush below the roost.

It appears that insects, sometimes quite small ones like termite workers, are far more freely taken than the literature suggests (summarized in Brown & Amadon 1968) and that, as those authors point out, snakes are not a major aspect of their diet in point of numbers as opposed to bulk. The ingestion of grass requires further study. The normal problem in deducing diet from pellets, differential capability and rate of digestion of different prey items, is particularly acute in a species with as powerful a digestion as the Secretarybird appears to have.

We are obliged to P. le S. Milstein, P. Steyn and C. J. Vernon for valuable criticisms of a draft of this paper, to Dr. R. F. Lawrence of the Albany Museum in Grahamstown for identifying scorpion material submitted, and to R. H. N. Smithers for facilities for study in the National Museums of Rhodesia.

References:
Allen, L. D. C. & Ansell, W. F. H. 1966. The Secretary Bird (*Sagittarius serpentarius*) in the Luangwa Valley. *Puku* 4: 187–188.
Brown, L. H. 1955. Supplementary notes on the biology of the large birds of prey of Embu District, Kenya Colony. *Ibis* 97: 38–64.
Brown, L. H. & Amadon, D. 1968. *Eagles, Hawks and Falcons of the world.* London: Country Life.
Editor. 1968. Diet of a Secretary Bird (Part two). *Bokmakierie* 20: 75.
Karmali, J & Karmali, J. 1968. A study of the Secretary Bird. *Bokmakierie* 20: 62–65.
McLachlan, G. R. & Liversidge, R. 1957. *Roberts birds of South Africa.* Cape Town: S. Afr. Bird Book Fund.
— — 1970. *Roberts birds of South Africa.* Cape Town: John Voelcker Bird Book Fund.
Roberts, A. 1940. *The birds of South Africa.* London: S. Afr. Bird Book Fund.
Steyn, P. 1961. Observations on the Secretary Bird (*Sagittarius serpentarius*). *Afr. Wild Life* 15: 191–198.
van Someren, V. G. L. 1956. Days with birds. *Fieldiana Zool.* 38
Vernon, C. J. 1967. Some observations from the journal of K. W. Greenhow. *Ostrich* 38: 48–49.

The American Pectoral Sandpiper in Africa

by P. J. G. Ginn & R. K. Brooke

Received 18th June, 1971

The American Pectoral Sandpiper *Calidris melanotos* (Vieillot) is a rare winter visitor to Africa. It has been collected at Lake Naivasha in Kenya on 11 May 1952 (Williams 1952) and at Rondevlei, Cape Town in South Africa on 25 March 1965 in company with the Little Stint *C. minuta* (Leisler) (Middlemiss 1965). There are a few published sight records: Oulidia on the coast of Morocco on 22 and 23 September 1963 in company with Dunlin *C. alpina* (L.) and Curlew Sandpipers *C. ferruginea* (Pontoppidan) (Smith 1964); near Casablanca, also on the coast of Morocco, on 1 October 1963 in company with Ruff *Philomachus pugnax* (L.) (Smith 1964); Heany in Rhodesia from 2 to 4 April 1949 (Editor 1949); Bathurst District on the coast of the eastern Cape Province of South Africa in company with Little Stints and Curlew Sandpipers on 3 and 24 April and on 1 May 1966, and with Ruff and Wood Sandpipers *Tringa glareola* L. on 3 December 1967 (Tree 1966, 1971).

P. J. G. G. obtained a female in fresh nuptial plumage on 25 April 1971 at Toromoja (quarter degree square 2124BI) on the Botletle River in Botswana. It was in a flock of c.10 Curlew Sandpipers on the river bank of which a male in winter plumage was also collected. The American Pectoral Sandpiper was collected as it was believed, in view of its straight bill, to be a Reeve. However upon examination it was realised that this was not the case. A study of Ridgway (1919) and of Witherby *et al.* (1943) shows that in fact an American Pectoral Sandpiper was collected. The critical points are: white shaft of the outermost primary; outer four pairs of rectrices of virtually equal length and the two inner pairs substantially longer, particularly the central pair (distance between tips of the four outer pairs and the innermost pair when the tail is held closed 9.5 mm); the eyestripe is not well developed and does not extend behind the eye; breast feathers dull dark brown broadly edged with pinkish buff; no fulvous on the flanks. All these characters show that our specimen is not the Siberian Pectoral Sandpiper *C. acuminata* (Horsfield) which despite its more westerly breeding range has not been taken in Africa. Our specimen has a right wing of 128, left wing 129.5, culmen (exposed) 25, tail 63, tarsus

25, middle toe without claw 23.5 mm, weight 59.75 g, gonads small. It is now in the National Museums of Rhodesia in Bulawayo.

This is the first record of the American Pectoral Sandpiper from Botswana and the second collected specimen from southern Africa. It will be noted that all records of this species in Africa are of single birds, usually in company with other related waders. The only inland records are the specimens from Lake Naivasha and Toromoja and the sight record from Heany which Smithers *et al.* (1957: 19) doubt. In view of their distribution within the continent it would appear that birds breeding in eastern Siberia and in eastern North America may come to Africa and that they may do so more regularly than has been supposed. The species will, no doubt, be reported from other parts of Africa in due course.

We are obliged to Mr. R. Boulton, Director of the Atlantica Research Station near Salisbury in Rhodesia, for the loan of Ridgway (1919). He concurs in our identification.

References:
Editor. 1949. Points from letters. *Ostrich* 20: 96–97.
Middlemiss, E. 1965. Rare sandpiper at Rondevlei bird sanctuary. *Ostrich* 36: 147.
Ridgway, R. 1919. The birds of north and middle America. *Bull. U. S. Nat. Mus.* 50.
Smith, K. D. 1964. Nearctic waders in Morocco. *Ibis* 106: 530–531.
Smithers, R. H. N., Irwin, M. P. S. and Paterson, M. L. 1957. *A check list of the birds of Southern Rhodesia.* Salisbury: Rhodesian Ornithological Society.
Tree, A. J. 1966. Pectoral Sandpiper, *Calidris melanotus*, in Bathurst District, Eastern Cape. *Ostrich* 37: 195–196.
— 1971. Another Pectoral Sandpiper in Bathurst District, E. Cape. *Ostrich* 42: 80–81.
Williams, J. G. 1952. American Pectoral Sandpiper in Kenya Colony. *Ibis* 94: 538.
Witherby, H. F. Jourdain, F. C. R., Ticehurst, N. F. & Tucker, B. W. 1943. *The handbook of British birds* IV. London: H. F. & G. Witherby Ltd., London.

[At my instance, and with the agreement of P. R. Colston, a specimen of *Calidris melanotos* collected at Fort Simpson, North-West Territories, Canada, in September 1862 was donated from the University Museum of Zoology, Cambridge to the National Museum, Bulawayo. M. P. Stuart Irwin has duly compared it with the Botswana specimen discussed above, which he confirms is correctly identified, the wholly white shaft of the outermost primary in particular being diagnostic—Ed.]

Notes on the identification of eggs, egg mimicry and distributional history and the status of the form *serratus*, in the parasitic *Clamator* cuckoos

by C. J. O. Harrison

Received 16th June, 1971

Summary

The blue eggs of several *Clamator* species are very similar. In some cases two species are sympatric in distribution, and the collected eggs show an overlap in size and shell-weight. It is not possible to identify specifically these eggs with certainty and since it is also likely that field identification is fallible, information based on collected specimens should be used with caution.

The parasitic cuckoos of the genus *Clamator* have eggs which, over most of their range, mimic those of the normal host species in colour and pattern, showing parallel variation in some African localities. In southern Africa, however, eggs of *C. glandarius* and *C. j. serratus* do not resemble those of the hosts, and it is likely that the species have moved into this region in evolutionarily recent times. The southern African form *serratus*, now treated as a race of *C. jacobinus*, differs from the latter in plumage, distribution, egg size, and in most instances egg-shell colour. It appears to have diverged to a point where it seems preferable to treat it as a separate species.

Introduction

The following notes result from an examination of the extensive cuckoo egg collection in the British Museum (Natural History), and the discussion is based mainly on this material.

Identification of *Clamator* eggs

Where species of *Clamator* cuckoos having similar plain blue eggs are sympatric in general range some doubts must arise concerning egg identification down to species level. The only certainly identified eggs of the parasitic cuckoos, unless laying has been witnessed, are those taken from the oviducts of shot birds. In other cases the collector must presumably rely on his own observations on the species apparently present in the locality, or on published data on egg size. Eggs are normally identified by the two dimensions of length and breadth, and in the case of cuckoo eggs shell-weight is often used since this will have been ascertained in order to help separate the eggs from those of the hosts. On the two dimensions the length is the more variable and the breadth the more conservative, the latter being presumably controlled to some extent by the relatively constant factor of oviduct diameter. Some data from eggs in the British Museum collection are as follows:—

C. coromandus. 300 eggs. Weight 380–757 mg. Breadth 20.0–24.6 mm (only eight below 22.0). No oviduct eggs.

C. jacobinus pica (India). 200 eggs. Weight 340–593 mg. Breadth 17.6–21.4 mm. Seven oviduct eggs. 426 mg, 18.5 mm; 447, 19.6; 430, 19.9; 548, 20.9; 437, 20.3; 245 (? incompletely formed), 19.4; 428, 18.2

C. jacobinus pica (Africa). 8 eggs. Weight 285–473 mg. Breadth 19.5–20.1 mm. One oviduct egg, 429, 19.9.

C. levaillantii. 10 eggs. Weight 469–558 mg. Breadth 20.0–20.9 mm, and one at 22.1. One oviduct egg, partly broken, –, 20.8.

If one examines the two Indian forms there is some evidence of size overlap. The vast majority of these eggs were taken by E. C. S. Baker in the zone of sympatry, in the same localities, at the same period of the year, from the same host species in some instances. Although his data gives no indication of doubt there seems no way in which he could have been certain of the species involved other than by extrapolating from an anticipated size.

The situation looks a little more satisfactory with regard to the two African birds; but the African and Indian *C. jacobinus* considered here are thought to be of the same race, are of similar size, and might be expected to lay eggs of similar size. Most of the eggs from India outside the range of *C. coromandus* are of the smaller nominate race of *C. jacobinus*. Thirty-nine such eggs have a range of 18.0–21.0 mm and an average breadth of 19.3 mm. However, both this and the range of oviduct egg sizes of Indian *C. jacobinus* overlap the complete size range of *C. levaillantii* in Africa. It seems improbable that the species adjusts its egg size to exactly fill the range below that of its larger competitor, and more likely that the identification of the eggs of *C. jacobinus* in the field may have been adjusted according to the anticipated size of the egg of the larger sympatric species. In the circumstances there must be some uncertainty as to the specific identification of the eggs of these birds, and allowance must be made for this in using any data drawn from them.

The eggs laid by the various species of *Clamator* cuckoos show relative consistency of colour and pattern, and a high degree of mimicry of the eggs of host species over most of their geographical range. The Great Spotted Cuckoo, *C. glandarius*, with a range through the Mediterranean region, Asia Minor and Africa south of the Sahara, is normally a brood-parasite on the Corvidae. Its eggs are a pale greenish blue, heavily spotted and speckled in shades of grey and brown, and showing little variability. These bear a close general resemblance to the eggs of corvid species, and have a particularly strong mimetic resemblance to those of the Magpie, *Pica pica*, which is the principal host of this cuckoo.

The Pied Cuckoo *C. jacobinus*, Stripe-breasted Cuckoo *C. levaillantii*, and Red-winged Crested Cuckoo *C. coromandus* are normally brood-parasites of the larger Timaliidae. *C. jacobinus* occurs in Africa and India; *C. levaillantii* occurs in Africa south of the Sahara and is extensively sympatric with the first; and *C. coromandus* occurs in south-east Asia and in northern India, showing some sympatry with *C. jacobinus*. *C. jacobinus* is a smaller bird, *C. levaillantii* a little larger, and *C. coromandus* is distinctly larger. The last two species and, over most of its range, *C. jacobinus*, lay immaculate blue eggs which resemble those of the timaliid host species so closely that they are normally separable only on shape, size, and shell-weight. In India and south-east Asia there is some variation in the colour and pattern of the eggs of *Garrulax* species which *C. coromandus* parasitizes. These may be pale blue or white, or may be sparsely marked with red. Possibly because of persistent variability within an area there appears to be no adaptation for special mimetic resemblance, and typical blue cuckoo eggs occur in these nests.

In tropical Africa the Brown Babbler *Turdoides plebeja* is a major host to both *C. jacobinus* and *C. levaillantii*. This host species usually lays an immaculate blue egg, but in part of Nigeria it shows a striking variation. Clutches from this region may be of a uniform light pink, quite unlike those found in any other avian species. They have been referred to by Serle (1939) and illustrated in Thomson (1964). In normal blue eggshells the pigment is present throughout the whole thickness of it (Harrison 1963). These pink eggs appear to have white shells with a superficial pink layer. Occasionally the two pigments are combined to produce variable grey or lilac tints. The British Museum (Natural History) has a clutch of grey eggs (reg. no. 1928.10.8.3–5) in addition to a pink clutch (1938.1.25.43–54), and Serle (*pers. comm.*) found eggs of pale mauve and grey-blue.

Serle also found two clutches of pink eggs each containing a pink egg of *C. levaillantii* (1–2) (numbers in parenthesis refer to data given below). The Museum has a clutch of pink eggs with a slight lilac tint containing a similar egg of *C. levaillantii* but with a slightly more buff tint (3), and also a clear pink egg of that cuckoo (4) and a lilac egg of *C. jacobinus* (5). A clutch of white eggs of *T. plebeja cinerea* from Uganda contains a white egg of *C. jacobinus* (6). From this it would appear that consistent and conspicuous variation of the host's eggs in these regions of Africa is matched by adaptive variation in the eggs of *Clamator* species to an extent that suggests an association of long standing. The close correlation of cuckoo and host egg colours in the known examples is of interest. One would have anticipated an occasional failure to match the colour. This correlation might be due, in part, to the relatively small sample.

In addition to these there are, however, in the Museum collection several instances of blue eggs of *C. jacobinus* from East Africa which were found in nests of the White-vented Bulbul *Pycnonotus barbatus*, which has white eggs very heavily freckled with purplish-red spots and flecks. The total lack of resemblance suggests either a recent adoption of this host or a lack of response from host and/or predators relying on vision (Harrison 1968).

A similar situation exists in southern Africa. Here *C. glandarius* is present but in addition to parasitising *Corvus albus* with typical corvid eggs is also parasitic on the Cape Rook *C. capensis*, which has pale eggs with red spots and blotches, and on various starling species which have immaculate blue eggs or blue eggs with sparse red markings. The cuckoo shows no evidence of adaptation in egg colour to these other hosts, and its eggs are conspicuously different.

A very distinct form of the Pied Cuckoo, *C. jacobinus serratus*, previously regarded as a separate species, occurs in southern Africa. It lays consistently larger eggs than other races of *C. jacobinus* and these are always immaculate white. It parasitises not only *Pycnonotus barbatus* but other bulbuls including the Sombre Bulbul *Andropadus importunus*, which has white or buffish eggs with brown and grey spots, blotches or scribbles. It also parasitises the Fiscal Shrike *Lanius collaris*, with greenish, dark spotted eggs; and the Fiscal Flycatcher *Melaenornis silens*, which has greenish eggs heavily spotted with buff. Again there is no resemblance between eggs of cuckoo and host, although the pure white egg of the former might be adduced as evidence of a partial adaptation to hosts whose eggs have a mainly white or whitish ground colour.

In view of the wide range of host species involved in southern Africa one can hardly argue in favour of a general difference in host response or predation between this and other regions, and it is more reasonable to suppose that the lack of mimicry indicates an evolutionarily recent invasion of this region by both *C. glandarius* and *C. jacobinus*.

This is not in agreement with Friedmann's hypothesis (1964). He appears to have assumed that a white cuckoo's egg was the precursor of a blue egg which in turn gave way to patterned eggs, and that the presence of such colours in present-day species was a clue to their original phylogeny. He suggests that the genus originated in South Africa, spread to Central Africa and to south-east Asia where it produced the larger *coromandus* from which *glandarius* was derived, and spread back first to the Mediterranean and then to southern Africa.

It would seem equally reasonable to suppose that the ancestral form had an Afro-Asiatic distribution and during a period, or periods, of Pleistocene glaciation differentiated in glacial refuges to produce *coromandus*, probably in the south China region, *glandarius* in the Mediterranean region, and *jacobinus* and *levaillantii* somewhere in the North African, Arabian and Iranian regions. With subsequent climatic changes the fragmentation in the arid regions and the spread into southern Africa could have occurred. In this case the white egg of *C. j. serratus* could be a secondary derivation from a bird which, as the West African evidence shows, is capable of adapting its egg colour to that of its host over a period of time.

Data on abnormally coloured eggs

1. *C. levaillantii*. set 37/9. 25 × 20.1 mm, 452 mg. W. Serle. Kafanchen, Nigeria. 1937.
2. *C. levaillantii*. set 37/38. 24.7 × 20.0 mm, 475 mg. W. Serle. Kafanchen, Nigeria. 1937.

3. *C. levaillantii*. 1945.3.238. 24.4 × 20.8 mm, 490 mg. R. S. Shuel. Kano, Nigeria. 10 Sept. 1936.
4. *C. levaillantii*. 1938.12.2.1. 25.6 × 20.7 mm, 512 mg. J. B. Welman. Kaduna, Nigeria. 5 Aug. 1936.
5. *C. jacobinus*. 1964.1.1. 24.4 × 19.0 mm, –. J. G. H. Brotherton. Kaduna, Nigeria. March 1936.
6. *C. jacobinus*. 1962.19.12. 26.2 × 19.9 mm, 399 mg. B. G. Kinloch. Akokoro, Uganda. 2 April 1950.

The status of *serratus*

C. j. serratus of southern Africa is a very distinct form. Apart from a slightly longer tail its measurements are not significantly different as regards the normally measured dimensions. However, its eggs are consistantly larger than those of *C. j. pica*, thirty-three having a weight range of 332–723 mg and a breadth of 21–23.5 mm, being mostly larger than eggs of *C. levaillantii*. It is possible that the size difference might reflect a difference in body size not apparent from the conventional measurements. These larger eggs are always white in colour. This form differs in plumage colour from the typical *C. jacobinus*, the breast of which is pale, almost white, in colour; while *serratus* is dimorphic, being either pale grey or black on the underside. Its breeding distribution is in Africa south of the Zambesi; and it is a migrant, occurring in southern Africa in the breeding season between October and March, and wintering further north within the range of *C. j. pica*. North of the equator, the latter breeds at the opposite time of year, from March to October, and may move south into the range of *serratus* when not breeding, but more southerly birds breed at the same period as *serratus*. There is a single instance, from Strathmore Ranch, Southern Rhodesia, on 27th Feb. 1922, of two eggs which appeared to be those of *C. j. pica* occurring in the breeding range of *serratus*. The eggs were blue in colour, weighed 331 and 333 mg and measured 19.5 and 19.9 mm (B. M. reg. no. 1962.9.13), and were found in a *Turdoides jardinei* nest. White cuckoo eggs from further north than the usual range of *serratus* appear to be those of *C. j. pica*.

This population therefore differs from *C. jacobinus* in plumage colour; and its eggs differ from those of *jacobinus* in size and colour. A reference to a loud piping call recorded mainly in southern Africa (Mackworth-Praed & Grant 1952) may refer to some voice difference, although there are no further data on this. The original reason for making this form a race of *C. jacobinus* appears to have been the similarity in size and the fact that birds of each form appeared in the range of the other (Mackworth-Praed & Grant 1937). Although it is obviously a species pair with *C. jacobinus*, and of the same origin, it appears to have separated and diverged to a point where it has achieved full isolation, and unless there is some evidence to the contrary it seems preferable to treat it as a separate species, *C. serratus*.

Acknowledgements

I am grateful to Dr. W. Serle for data on his West African eggs of *Turdoides plebeja* and *Clamator levaillantii*; and to Captain C. R. S. Pitman for help and information.

References:
Friedmann, H. 1964. Evolutionary trends in the avian genus *Clamator*. *Smiths. Misc. Coll'ns*. 146(4) (Publ. 5432).
Harrison, C. J. O. 1963. Eggshell pigmentation in the Jacobin Cuckoo, *Clamator jacobinus* (Bodd). *Bull. Brit. Orn. Cl.* 83: 258–259.

Harrison, C. J. O. 1968. Egg mimicry in British Cuckoos. *Bird Study* 15: 22–28.
Mackworth-Praed, C. W. & Grant, C. H. B. 1937. Systematic notes on East African birds. *Ibis* (14) 1: 402–406.
— 1952. *African handbook of birds*, Series I, Vol. 1. London: Longmans.
Serle, W. 1939. Field observations on some northern Nigerian birds. *Ibis* (14) 3: 654–699.
Thomson, A. L., Ed. 1964. *A new dictionary of birds*. London: Nelson.

The Slatey Egret *Egretta vinaceigula* is a good species

by C. W. Benson, R. K. Brooke & M. P. Stuart Irwin

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At the outset we should explain that we consider that the most suitable English name for this species is as above. Mackworth-Praed & Grant (1962), for instance, use 'Brown-throated Heron'. But according to C. J. Vernon, a paper by whom on this species follows the present one*, in life it appears much more slate coloured than the Black Egret *Egretta ardesiaca* (Wagler), of which it has sometimes been placed as a colour phase. Also, from museum skins, it might be inferred that the vinous throat is the most diagnostic feature, but in life it is usually difficult to see, since as often as not, according to Vernon, the bird is walking away from the observer.

The Slatey Egret *Egretta vinaceigula* (not *E. vinaceigularis* as in Mackworth-Praed & Grant 1962) was described by Sharpe (*Bull. Brit. Orn. Cl.* 5: 13) in 1895 on two male specimens collected by Thomas Ayres at Potchefstroom in the Transvaal and which are now in the British Museum (Natural History). It was not recorded again for many years until R. H. N. Smithers collected another male at Kabuta in the Caprivi Strip on 7 July 1958 (Smithers 1964). Doubt has arisen whether the Slatey Egret is a species or a variant (mutant or colour phase) of the Black Egret *E. ardesiaca* (Wagler). Roberts (1940) treated it as a straight synonym of the Black Egret. Bock (1956) in his review of the herons did not see material but placed it as a colour phase of the Black Egret on the grounds that Sharpe's original description did not indicate any other difference from the Black Egret beside the rufous or, more correctly, vinous throat. Bock's view has been followed by the S.A.O.S. List Committee and by McLachlan & Liversidge (1957, 1970) but not by Clancey (1965) or by Mackworth-Praed & Grant (1962). We have received field reports which suggest that there is a difference in ecology between the two forms and have therefore re-examined the specimens and are satisfied that the Slatey Egret is a good species.

Sharpe originally placed *vinaceigula* with *ardesiaca* in the genus *Melanophoyx* which he erected in 1894 (*Bull. Brit. Orn. Cl.* 3: 38) on the grounds that it differed from the new world *Florida* Baird 1858 by having elongated plumes on the crest and breast and with the back plumes not reaching beyond the tail. He regarded it as similar to *Florida* in that the bill or culmen was not as long as the middle toe including the claw. Bock (1956) placed both genera in *Hydranassa* Baird 1858 on the ground that the scapular plumes were lanceolate to filamentous, not aigretted. He noted that the Reef Heron *E. sacra* (Gmelin) of Asia and Australasia had both types of scapular plumes. He also mentioned a wild hybrid between the Snowy Egret *E. thula* (Molina) and the Little Blue Heron *E. caerulea* (L.) reported by Sprunt (1954). We follow White (1965) and Clancey (1965) in placing all these herons in *Egretta*

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* Vernon's paper will be in the next number—Ed.

Forster 1817. It may be that Bock (*op. cit.*) did not do this because he felt reluctant to sink any more genera than he had already done in his review.

Although still only known from three specimens the Slatey Egret *E. vinaceigula* can be shown to differ consistently from the Black Egret *E. ardesiaca* in having a vinous throat, a pale base to the lower mandible, white bases to the shafts of the primaries, a dull yellowish green (not black) tarsus and a shorter wing and culmen (see Table). There is also apparently a tendency for the Slatey Egret to have broader bases to the plumes on the chest but occasionally the Black Egret has them as broad. The Slatey Egret would however appear, on the very limited material, to be somewhat variable in the colour of the underparts. In *Cat. Birds Brit. Mus.* 26, 1898; 105 Sharpe writes:—"Both examples of *M. vinaceigula* are adult birds with well developed crests and praepectoral plumes, as well as ornamental plumes on the back. One of them has the breast and abdomen washed with vinous, and in addition to the upper throat, the centre of the lower throat and some of the long praepectoral feathers are also vinous". The abdomen of the latter specimen is pale grey whereas that of the Bulawayo specimen is blackish, and the latter is also particularly richly coloured on the throat. It appears that the Slatey Egret is somewhat variable in appearance, but the differences noted at the beginning of this paragraph are constant and we are confident that we are dealing with a discrete species. In both species width of the primaries and notching on the inner web are variable as is the shade of blue-black above and the length of the back plumes.

Table. Measurements in millimetres of the Slatey Egret *Egretta vinaceigula* and the Black Egret *E. ardesiaca.*

Slatey Egret	3♂♂		
Wing	229	240	242
Culmen	53	57	57.5
Tarsus	83	85	86
Black Egret			
	Africa		
♂♂			
Wing	244–273 av. (18) 266.4		
Culmen	58– 69 av. (17) 64.5		
Tarsus	78– 92 av. (15) 85.3		
♀♀			
Wing	235–263 av. (9) 249.0		
Culmen	56– 66 av. (8) 62.3		
Tarsus	78– 89 av. (7) 84.9		
	Madagascar		
1♂			
Wing	242		
Culmen	67		
Tarsus	89		
4♀♀			
Wing	237–250 av. 244.0		
Culmen	60– 61 av. 60.5		
Tarsus	79– 88 av. 84.2		

Note: Culmen lengths are from the posterior of the nostril slit.

In its ecology the Slatey Egret feeds either solitarily or in company with Black Egrets. When solitary it feeds away from the water's edge in moist grassland. It is not known to bring its wings over its head to form an umbrella or hood as does the Black Egret: field data from the Chobe Game Reserve from A. J. Tree (pers. comm.) to M.P.S.I. and T. N. Liversidge to R.K.B. The Slatey Egret may be seen sparsely but widely in the Okavango

Swamps, the Chobe Game Reserve, the Caprivi Strip and the Kafue Flats (R. J. Dowsett in *litt.* to R.K.B.) and it must also occur in south-eastern Angola. However it seems likely to have a relatively very limited distribution in south-central Africa compared to most other African Ardeidae, and is possibly of relict distribution, perhaps in unsuccessful competition with *E. ardesiaca*. In the last century it occurred at Potchefstroom (whence three old specimens of *ardesiaca* have also been available), but perhaps only as a vagrant, though may be found there again as well as elsewhere in South Africa. Most recently, Tree (in *litt.* to R. K.B.) writes that G. Wilson and M. Woltner, experienced members of the Cape Bird Club, found a breeding colony of this species on the 10th or 11th May 1971 some fifteen miles up the Chobe River from Kasane. There were some eight pairs nesting in reeds c. 1 m above the water. The reeds were too dense to permit entry, let alone allowing an examination of the nests.

The Table contains mensural data on the two species as represented in the collections of the British Museum (Natural History) (all measurements by C.W.B., including a Potchefstroom specimen of *ardesiaca* in Cambridge) and the National Museums of Rhodesia in Bulawayo (wing and culmen measurements by R.K.B., tarsus by M.P.S.I.). The measurements for the Black Egret were taken from the whole range of the species, i.e. Africa south of the Sahara and Madagascar. There is no suggestion of geographical variation in these measurements, long and short measurements occurring haphazardly throughout the area of distribution. It will be noted that males average larger than females, but the overlap, together with the small sample, makes us hesitate to assign unsexed birds, particularly juveniles, to a sex on mensural characters, and therefore we have ignored them in the Table. A female Black Egret from Botswana is recorded as weighing 14½ ozs.

Anybody who has the opportunity to visit the wet areas of northern Botswana and the Caprivi Strip should keep an eye out for the Slatey Egret, should make notes on what is seen and communicate them to a journal for the information of all. We are obliged to Mrs. B. P. Hall for examining material in the British Museum with C.W.B., and to Messrs. R. J. Dowsett, T. N. Liversidge and A. J. Tree for field data communicated.

Summary

The Slatey Egret *Egretta vinaceigula* is shown on morphological and ecological grounds to be a separate species found chiefly in the Chobe River system of northern Botswana, and not a phase of the Black Egret *E. ardesiaca*, as held by some workers. The Black Egret is shown to be sexually dimorphic in measurements but to show no geographical variation in this regard.

References:

Bock, W. J. 1956. A generic review of the family Ardeidae (Aves). *Amer. Mus. Novit.* 1779.

Clancey, P. A. 1965. A catalogue of birds of the South African sub-region (part 1). *Durban Mus. Novit.* 7(9): 201–304.

Mackworth-Praed, C. W. & Grant, C. H. B. 1962. *African handbook of birds*, Series II, Vol. 1. London: Longmans.

McLachlan, G. R. & Liversidge, R. 1957. *Roberts birds of South Africa.* Cape Town: S. Afr. Bird Book Fund.

— 1970. *Roberts birds of South Africa.* Cape Town: John Voelcker Bird Book Fund.

Roberts, A. 1940. *The birds of South Africa.* London: S. Afr. Bird Book Fund.

Smithers, R. H. N. 1964. *A check list of the birds of the Bechuanaland Protectorate.* Salisbury: National Museums of S. Rhodesia.

Sprunt, A. 1954. A hybrid between the Little Blue Heron and the Snowy Egret. *Auk* 71: 314.

White, C. M. N. 1965. *A revised check-list of African non-passerine birds.* Lusaka: Government Printer.

The eastern and southern populations of the Mottled Spinetail

by R. K. Brooke

Received 29th June, 1971

Recent literature indicates some confusion over the range and subspecific variation of the Mottled Spinetail *Telacanthura ussheri* (Sharpe). Mackworth-Praed & Grant (1962) attribute the one specimen from Zumbo in extreme western Mozambique to both *T. u. stictilaema* (Reichenow) and to *benguellensis* (Neumann). White (1965) places all eastern African birds in *stictilaema* which he regards as having a continuous distribution in ecologically suitable areas. Clancey (1968) has realised that this is not correct and identified a specimen from the Devure River which I have also seen as *benguellensis*. While holding a Frank M. Chapman Memorial Grant from the American Museum of Natural History in New York I was able to examine many specimens of *T. ussheri* from most parts of its range in the museums listed in Brooke (1969). I am also obliged to Mr. P. A. Clancey for the loan of material in the Durban Museum, to Mr. C. W. Benson for examining material in the British Museum (Natural History) on my behalf, and to Dr. A. A. da Rosa Pinto for facilities for study at the Instituto de Investigacao Cientifica de Angola at Sa da Bandeira. En passant I found that *T. u. senegalensis* (Neumann) was inseparable from nominate *ussheri*. It is on the ranges and characters of *stictilaema* and *benguellensis* that I wish to comment.

Mackworth-Praed & Grant (1962) are correct in saying that *benguellensis* is duller black above than *stictilaema* in comparable plumage: this is apparent from the freshly moulted first primary of the type in New York. Their ranges do not meet. I know of no other character for separating the races in equivalent states of moult.

T. u. stictilaema (Reichenow) 1879: Ualimi on the Tana River in Kenya occurs both in evergreen forest and savanna woodland. There is material which I have examined myself unless an authority is cited from:—

Somalia: upper Juba River (Moltoni & Ruscone 1940).

Kenya: Chambiti Hills near Chifulu (P. L. Britton *in litt.*, on material in the National Museum in Nairobi), 30 miles north-north-east of Kibwezi, Kilifi, Meru, Mombasa, Nyambeni Mts., Sokoke, Useguha, Ualimi (these last two both from Reichenow 1902).

Tanzania: Amani (Benson *in litt.* on material in the B.M.N.H.).

Vincent's (1934) sight records from the Lurio River in northern Mozambique cannot be placed racially in the present state of knowledge, and this also applies to those of Procter (1968) in the Ruaha National Park in south-west Tanzania.

Wing lengths range and average:—
♂♂ 139–146 av. (7) 142.6 mm;
♀♀ 132–147 av. (12) 141.6 mm;
overall 132–147 av. (20) 142.6 mm.
Weights including those in Moreau (1944) range and average:—
♂♂ 30–32 av. (3) 30.67 g;
♀♀ 28.5–34.6 av. (5) 31.52 g;
overall 28.5–34.6 av. (8) 31.20 g.

T. u. benguellensis (Neumann) 1908: Blaasbalkfontein in Angola again occurs in both evergreen forest and savanna woodland. There is material which I have examined myself unless an authority is cited from:—

Angola: Blaasbalkfontein, Mantipa, Cassoallala, Vila Salazar (the latter two from Benson *in litt.*, on material in the B.M.N.H.).
Zambia: Kabulamena (Winterbottom 1942).
Rhodesia: Chikwizo Tribal Trust Land, 25 miles east of Chirundu, Devure River near Birchenough Bridge, lower Hunyani River, Lusito River, Mkota T. T. L.
Mozambique: Zumbo (Benson *in litt.*, on material in the B.M.N.H.), Lusito River, Funhalouro (da Rosa Pinto 1959).
South Africa (Transvaal): Kruger National Park, sight records (A. C. Kemp in MS list).

Wing lengths including those measured by C. W. Benson on my behalf range and average:—

♂♂ 141–151 av. (8) 145.8 mm;
♀♀ 142–150 av. (10) 146.7 mm;
overall 141–151 av. (20) 146.3 mm.

Weights range and average:—

(a) Rhodesia
♂♂ 31.3–36.5 av. (4) 34.40 g;
♀♀ 33.0–37.5 av. (3) 35.37 g;
unsexed trapped on 7 June 31–36 av. (7) 33.34 g;
overall 31.0–37.5 av. (14) 34.08 g.
(b) Angola
♂ 27, ♀ 32 g.

References:
Brooke, R. K. 1969. *Apus berliozi* Ripley, its races and siblings. *Bull. Brit. Orn. Cl.* 89: 11–16.
Clancey, P. A. 1968. Subspeciation in some birds from Rhodesia. *Durban Mus. Novit.* 8(11): 115–152.
da Rosa Pinto, A. A. 1959. Alguns novos "records" de aves para o Sul do Save e Mocambique, incluindo o de um genero novo para a sub-regiao da Africa do sul, com a descricao de novas subspecies. *Boll. Soc. Estud. Prov. Mocambique* 118: 15–25.
Mackworth-Praed, C. W. & Grant, C. H. B. 1962. *African handbook of birds*, Series II, Vol. 1. London: Longmans.
Moltoni, E. & Ruscone, G. G. 1940. *Gli uccelli dell' Africa Orientale Italiana* I. Milan.
Moreau, R. E. 1944. Some weights of African and wintering palaearctic birds. *Ibis* 86: 16–29
Procter, J. 1968. The birds of the Usangu Plains. *Tanz. Notes & Recs.* 69: 1–14.
Reichenow, A. 1902. *Die vogel Afrikas*. II. Neudamm: Neumann.
Vincent, J. 1934. The birds of northern Portuguese East Africa, Part 5. *Ibis* (13) 4: 757–799.
White, C. M. N. 1965. *A revised check list of African non-passerine birds*. Lusaka: Government Printer.
Winterbottom, J. M. 1942. A contribution to the ornithology of Barotseland. *Ibis* (14) 6: 337–389.

Amadina fasciata (Gmelin) as a "nest-parasite"

by G. R. Cunningham-van Someren

Received 16th June, 1971

Amadina fasciata has been recorded as nesting in association with various ploceids, utilising vacated nests of *Passer eminibey* (Hartlaub), *Pseudonigrita arnaudi* (Bonaparte) and *Ploceus* spp.: see Lynes (1924), the van Somerens (1945) (they omitted to give the locality of many of the nest colonies examined, but they were at the south end of Lake Magadi, Kenya), Friedmann (1960) and Mackworth-Praed & Grant (1955). Lynes describes the nest of

Amadina as "Either a sparrow-like ball of hay, with, often, a short entrance-funnel, in a bush; or in the hole of a tree; lined with feathers in either case". It is possible that these were old adapted nests of other species, as there is no evidence of observed nest building. My experience over many years in Kenya, Ethiopia and the Sudan suggests that Amadina only utilises old nests, and I have never found a nest occupied by Amadina that could have been built from start to finish by the bird.

In the course of a study of parasitic birds in Kenya during 1970 and early 1971, clear evidence was obtained of active nest usurpation by Amadina of nearly completed nests of *Ploceus velatus* Vieillot and *Pseudonigrita arnaudi*. The first such observation was made on 10th May 1970, the site some 50 km south-west of Nairobi on the road to Magadi, at ca. 1000 m above sea-level, in an area of Acacia thorn and rocky grassland. It was customary to lunch at a particular spot, and while watching a male *P. velatus* constructing a nest in close proximity to one occupied by an incubating female, my son and I noted a pair of Amadina fluttering and hopping around the building male *velatus*. When the *velatus* was absent, one or the other or both Amadinas would fly to the nest and inspect it, working round and over it, peering into the entrance porch or even entering. Each time the *velatus* returned there would be chivying, either the *velatus* driving off the Amadinas or *vice versa*. In one instance the *velatus* caught an Amadina inside the nest, and this resulted in quite a commotion. This chivying and inspection lasted a full hour, when we had to leave. We did not see any active courtship display in the Amadina pair. On returning a week later, the Amadinas were in possession of the *velatus* nest. The male *velatus* was building a third nest in the near vicinity, but was not worried by the Amadinas, which however were chased off by the female *velatus* from time to time. A week later still, the female *velatus* was feeding young, and it appeared that the Amadina female was incubating, as only the male was around. The male *velatus* had commenced a fourth nest lower down in the same tree. These nests were high up, at the ends of slim branches of an Acacia, so that a close inspection was not possible.

Further evidence of usurpation was obtained in May 1971, at a point further along the road to Magadi. Peter Hudson and I watched an Amadina pair questing around a group of nests of *P. arnaudi*, many of which were occupied, and some had been taken by *P. eminibey*. The pair visited several nests, even entering them when the owners were absent. The owners, when present, seemed to take little notice of the potential interlopers, merely refurbishing their nests of the previous season. Amadina avoided contact, but resumed nest inspection as soon as the *arnaudi* were away. The Amadinas were especially interested in a particular nest, entering and inspecting it. This nest was definitely refurbished by *arnaudi*, which were seen several times taking grass-heads into it. One week later (31st May) the Amadinas had taken this nest over, and were in full possession. It was watched in the morning and again in the late afternoon, and on both occasions they were seen carrying nesting material to it. Three days later the male Amadina was about, and a female Amadina was flushed from the nest by tapping it with a stick since it was out of reach.

Courtship display has been seen. The male plucks a leaf or piece of grass, carries it in his beak to the female. Sidling up to her, the token is sometimes accepted, but is quickly dropped, and the male commences his display. This is a jerky jumping up and down on the perch, stiff legged, the body held very upright and appearing very slim, and the head stretched upwards. This "dance" takes place with the two birds almost in contact with one another, and the female at times joining in. When the female moves off, the male follows, and the performance may be repeated.

The finding of Amadina actively usurping almost complete nests of *Ploceus velatus* and *Pseudonigrita arnaudi* suggests an evolutionary trend away from "old nest utilisation" towards an aggressive "usurpation behaviour" or "nest parasitism" as described for *Passer eminibey* by Payne (1969). I feel that utilisation of old vacated or abandoned nests is strictly not "nest parasitic behaviour" as suggested by Payne. As there is no definite evidence that Amadina ever makes its own nest, the use of old nests is an obligate behaviour, more primitive than the trend to "nest usurpation" now described. Thus the case of Amadina more or less parallels that of *P. eminibey* except that the latter does make its own nest as well as utilising vacated or abandoned nests and resorting to "nest usurpation", not only confined to *P. arnaudi*, for the nests of *Ploceus rubiginosus* Rüppell, *P. intermedius* Rüppell, *P. spekei* (Heuglin) and *P. velatus* are also taken over during or just after construction: see MacInnes (*Journ. E. Afr. Nat. Hist. Soc.* 47/48, 1932/33: 134), Fuggles-Couchman & Elliott (*Ibis*, 1946: 345), Betts (*Ibis*, 1966: 528) and myself (in prep.)

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References:

Friedmann, H. 1960. The parasitic weaverbirds. *Bull. U. S. Nat. Mus.* 223.

Lynes, H. 1924. On the birds of north and central Darfur (Part II). *Ibis* (11) 6: 648–719.

Mackworth-Praed, C. W. & Grant, C. H. B. 1955. *African handbook of birds*, Series I, Vol. 2. London: Longmans.

Payne, R. B. 1969. Nest parasitism and display of Chestnut Sparrows in a colony of Grey-capped Social Weavers. Ibis 111: 300–307.

van Someren, V. G. L. & G. R. C. 1945. Evacuated weaver colonies and notes on the breeding ecology of *Euodice cantans* Gmelin and *Amadina fasciata* Gmelin. Ibis 87: 33–44.

On the apparent movements of *Cossypha natalensis*

by P. L. Britton

Received 14th June, 1971

The Red-capped Robin-Chat *Cossypha natalensis* occurs rather disjointedly over much of eastern and southern Africa (not the south-west) and is typically a lowland bird of gallery forests and thickets, rarely above 1500 m. There is much disagreement on the number of races recognised although, of the three recognised by White (1962), there is almost unanimous agreement on two, *larischi* Meise and nominate *natalensis* Smith. But within White's *intensa* Mearns, Clancey (1959) recognises *garguensis* Mearns, *hylophona* Clancey and *egregior* Clancey. Ripley (1964) recognises *tennenti* Williams but Clancey (1967) considers it probably synonymous with *garguensis*. Hall (1959) and Irwin & Benson (1967) did not split *intensa* although Clancey (1967) says that he and Irwin have now reached virtual agreement that *intensa* and *hylophona* are in all probability not synonymous, and the arrangement of Clancey (1959) is followed by Benson, Brooke, Dowsett & Irwin (in press). Traylor (1962) could not recognise *hylophona* but recognised *garguensis*, extending the range of Clancey's (1959) concept of *garguensis* to central Uganda. As I have not examined specimens critically I prefer not to comment on the taxonomy of this very difficult species and I follow Clancey (1959), except that following Traylor (*op. cit.*) I consider that *garguensis* occurs south to about the equator in Uganda.

That this species might be to some extent migratory was first suggested by Pakenham (1948). More recently, Chapin (1953), Dekeyser & Derivot (1966) and Hall & Moreau (1970) have suggested that birds north of the Congo forest may be migrants but Traylor (1962) considered a bird from Yaoundé possibly referable to an undescribed race rather than a migratory *larischi*. In southern Africa, Oatley (1959, 1966) has documented movements of nominate *natalensis* and Clancey (1967) has said that "so many populations are now known to be highly migratory, and most birds taken in Zambia are almost certainly from populations which breed elsewhere". Benson & Irwin (1967) showed that some 75% of Zambia specimens were collected between September and November so that "the possibility of a partial long-distance migration out of Zambia cannot be discounted".

In view of the considerable speculation on the movements of this elusive species it seems desirable to examine all populations whether they are believed to be migratory or not. I have therefore analysed by months 589 dated specimens from the collections of the institutions listed and the literature as well as utilising the few available sound and ringing records. No data from the Republic of South Africa are considered as the situation with nominate *natalensis* is fairly clear (see Clancey 1964 and Oatley 1959, 1966). The only nominate birds considered are non-breeders in the Mozambique littoral. It is believed that some 95% of the extant dated specimens of *Cossypha natalensis* from outside South Africa are summarised in the Table.

C. n. garguensis

With the exception of one bird in August in post-juvenile moult, all birds from southern Ethiopia, southern Sudan and Neng, Kenya (one bird), and hence all birds from north of 2° N, were recorded between 15th November and 28th May. The remaining birds considered, from Uganda and Mt. Elgon (Kenya) between the equator and 2° N, exhibit no obvious pattern. There are three records of egg-laying between Kampala and Jinja, in the southern part of its range, two in April and one in May (Belcher 1919, Jackson 1938, Brit. Mus. (Nat. Hist.) collection). There is no ecological reason for a partial movement north and north-east out of Uganda after breeding and the scant records from north of 2° N may be biassed. But the single bird from Neng (2° 15′ N, 38° 32′ E) in November may well be a migrant as, according to the Survey of Kenya 1: 1 million map, Neng (not marked) would be in larva desert east of Marsabit. Cave & Macdonald (1955) and Urban & Brown (1971) consider it resident in southern Sudan and southern Ethiopia respectively. The type of *garguensis* from the Matthews Range, Kenya and the six birds from Mt. Endau, Kenya described as *tennenti* are not considered as they are from considerably further south than other *garguensis*.

C. n. intensa

A large series from the Kenya coast exhibits no obvious pattern except for a comparative lack of records between January and April. There may be a partial movement inland or north at this time as P. R. Colston (pers. comm.) netted only two in Sokoke Forest in April 1970 and I failed to net it at all in

TABLE

Distribution of *Cossypha natalensis* records by months in different areas (South Africa excluded).

		J	F	M	A	M	J	J	A	S	O	N	D	Totals
1	S. Ethiopia, S. Sudan, Neng (Kenya)	1	1	3	1	1	–	–	1	–	–	5	4	17
2	Uganda north of equator & Mt. Elgon (Kenya)	1	–	1	9	1	3	1	–	1	5	11	5	38
3	Kenya coast: Sokoke Forest	2	–	1	2	18	1	47	17	–	–	15	1	104
4	Kenya coast: Witu to Tanzania border, excluding Sokoke Forest	–	1	2	1	3	–	1	3	7	2	9	11	40
5	Tanzania coast	1	3	–	–	3	1	7	6	4	2	2	2	31
6	S. W. Kenya	–	1	–	–	2	–	1	1	–	2	–	–	7
7	Kenya/Tanzania border, Kilimanjaro-Usambaras, including Teita & Voi	3	6	3	1	4	12	20	2	4	1	5	9	70
8	Tanzania, 36–38° E, south of 5° S.	2	–	1	–	2	3	5	3	1	2	3	–	22
9	Tanzania west of 33° E, Uganda south of equator, Kivu, Ruanda, Burundi	1	–	–	–	1	3	4	5	4	6	4	1	29
10	Katanga (Congo) & Moxico (Angola), 7–12° S.	–	1	–	4	4	4	9	5	1	–	–	–	28
11	Zambia north of 12° S (N. Mwinilunga, Mweru Marsh, Lake Mweru)	–	–	–	–	3	–	–	2	7	5	1	–	18
12	Southern & western Zambia; Kariba Basin, Rhodesia; Ninda, Angola	–	–	1	1	–	1	–	–	–	11	8	3	25
13	Southern Malawi & bordering Mozambique	–	3	–	4	–	2	1	3	–	1	3	11	28
14	Eastern Rhodesia & Gorongoza Mt. (Mozambique)	6	2	5	4	–	1	1	1	4	11	11	10	56
15	Mozambique: *hylophona*	–	–	–	5	3	2	8	9	–	–	–	–	27
16	Mozambique: *egregior*	–	–	–	1	–	–	–	–	5	–	–	–	6
17	Mozambique: nominate	1	–	–	2	2	–	–	2	1	–	–	–	8
18	Mozambique: not raced	–	–	–	–	1	5	–	–	–	–	2	–	8
19	*Larischi*: south of 12° S (Mossamedes & Huila, Angola)	2	2	–	–	–	–	–	–	1	4	–	4	13
20	*Larischi*: elsewhere	–	1	1	5	3	2	7	4	4	1	7	4	39

Notes: 9. A bird from Kabinda (Lomami), Congo in November is included.
15, 16. Racial determinations are by Clancey (*in litt.*).
15–18. With the exception of a June bird from Netia, all are from south of the Zambezi River.

The following are excluded: Limpopo River, Rhodesia *egregior* (June) and nominate (July); Zambezi River below Chirundu *egregior* (September (2), January); Malawi north of 12° S March (3), April (2), July, November; central Tanzania, March, September, November; Mt. Endau, Kenya (six birds, January–February); Juba and Tana Rivers (Somalia & Kenya), not coast, 13 birds, January–June (see text).

Sokoke Forest and nearby Mida in two brief visits in April (1969 and 1971). Colston's birds (22nd and 23rd April) were both males and weighed only 29 and 32 g, less than the average of 34.2 g (range 29–39) for 32 males from coastal Kenya. Leslie Brown (*in litt.*) visits his plot at nearby Watamu each April, August and December but records this species only in August, so that any such movement may take place before January, and there is a comparative lack of records from Sokoke Forest in December. The few Tana River (Kenya) and Juba River (Somalia) birds away from the coast are in January (3), February (4), March (2) and June (4). However, as with *garguensis*, the possibility of any movement is speculative as an ecological explanation is lacking.

Birds from coastal Tanzania exhibit no obvious pattern. Vaughan (1929–30) considered Zanzibar birds resident but Pakenham (1948) put forward evidence of a movement of at least 25 km. According to Clancey (1959) Zanzibar birds are *hylophona* which seems rather unlikely, so that they are listed here for convenience. Some of the birds from the immediate hinterland of Tanzania considered below under *hylophona* might belong here as some of these are considered *intensa* or intergrades between *intensa* and *hylophona* by Clancey (1959).

C. n. hylophona

The birds from S. W. Kenya, the Kenya/Tanzania border from Kilimanjaro to the Usambaras including Teita and Voi, and Tanzania south of 5° S, between 36° and 38° E, exhibit no obvious pattern. However, of 26 specimens from Moshi (different years, different collectors), 24 are in June and July including six immature birds, and one came to a lighted room of a house at Amani on the night of 13th May (Sclater & Moreau 1933) so that there may be some movement in this border area. Certainly this would correlate with the presence of birds in Tanzania west of 33° E, Uganda south of the equator, Ruanda, Burundi and Kivu (Congo) only from June to November (with one in December, one in January and one on 27th May). With 26 out of 29 of these latter birds falling in the period June to November there seems little doubt that they move elsewhere from about December to May, but where? Although birds from further south in the southern Congo and Moxico (Angola) probably move south into Zambia to breed (see below) this is unlikely to be the explanation here as, if so, records would fall in the period April to September. The scattered records from central Tanzania are inconclusive and the off-season area cannot be ascertained from present knowledge.

That Zambia birds are not resident is already documented (Benson & Irwin 1967) but the off-season area is unknown. An examination of 28 specimens from Katanga (Congo) and Moxico (Angola) between 7° and 12° S shows that all but one fall in the period 4th April–24th September. The 25 records from southern and western Zambia, the Kariba Basin, Rhodesia and Ninda, Angola fall almost entirely between October and April. The vast majority are in October and November and probably refer to passage birds. Certainly, in the two years which I spent at Balovale my only record was on 13th and 14th October (Britton 1970) while Dowsett (1966) recorded a bird in atypical habitat at Lochinvar on 25th October and (*in litt.*) regards it as a definite migrant there from September to November. According to Farkas (1969), M. E. W. North recorded the song at the beginning of the breeding season near Mambova, several miles from the nearest riverine forest of the Zambezi. North went to Mambova with C. W. Benson who informs me that the recording was made on or about 10th January in a locality where there are dense thickets under *Baikiaea* forest, so that it was well into the breeding season in not unusual habitat. Traylor (1965) collected a bird just completing post-juvenile moult (not wings or tail) on the Liuwa Plain far from normal habitat in late October.

The only breeding record given by Benson *et. al.* (in press) is of an immature bird taken at Kafue Gorge on 4th March, probably from an egg laid in January (original ref. no. 334 therein). Breeding may well be confined to the extreme south and south-west of Zambia, especially the Zambesi Valley from which there are sound records between Victoria Falls and the Chobe confluence, on both sides of the river, being confined to September-December on the Rhodesia side (Benson *et al.* in press, Irwin *in litt.*). Benson *et al.* (in press) record gonads active in October-December, but I have ignored gonad activity as an indicator of breeding in this paper. Though helpful in assessing the time of breeding, this may well take place in a geographically distant area. The Ninda bird is an immature, probably from an egg laid in early November (Benson & Irwin 1967).

Zambia north of 12° S is considered separately, as geographically and ecologically these areas are closer to Moxico and Katanga; especially the north of the Mwinilunga District. Fourteen of the 18 records available fall between 29th August and 16th October, and the remaining four are in November and May, indicating passage to breeding areas further south. Only that, being closer to the non-breeding area, birds pass through earlier before breeding and later after breeding than is the case in southern and western Zambia. Benson *et al.* (in press) note that it was abundant in gallery forest at Salujinga (Mwinilunga) in May when it was highly uncommon at Mayau at 12° 45′ S. They have speculated on the possibility that northern Mwinilunga birds represent an undescribed race, but in view of these apparent movements I consider this unlikely. However, having read this paper, Benson (*in litt.*) considers it possible that the relatively equable northern Mwinilunga environment holds a resident breeding population in addition to passage birds, thus paralleling the case in *larischi* to the west (see below). He recorded it at Salujinga from 17th to 24th March 1963 although he did not record it in November 1964 (not that this necessarily reflects a true absence). Ref. 332 in Benson *et al.* (in press) mentions gonad activity in two males from northern Mwinilunga in October but as I have already pointed out breeding may take place elsewhere. It is not clear where seven birds from northern Malawi (north of 12° S) in March (3), April (2), July and November belong (these include, according to Benson, *in litt.*, four of his specimens from Chinteche in the Transvaal Museum).

There is little doubt that birds breeding in southern and south-western Zambia, the adjacent areas of Angola, and the Kariba Basin and Zambezi Valley above Victoria Falls, Rhodesia spend the dry season mainly north of 12° S, in Katanga (Congo) and Moxico (Angola), but the lack of birds on return passage in March—May is surprising. They clearly commence their post-nuptial moult before arriving in the non-breeding area as the three Zambia (Kalalua, Semende, Salujinga) April-May adults in the Livingstone Museum collection are in moult (Dowsett *in litt.*). Post-nuptial moult is not otherwise documented but according to Farkas (1969) post-juvenile moult lasts from the third to the sixth month, although Traylor (1965) recorded a young bird incompletely moulted in late October. Many of the rains visitors to Zambia originate from further north so that the off-season area is not entirely unexpected. However, it might have been thought to be the Mozambique littoral where two other species recently shown to be largely rains visitors to Zambia (*Campephaga phoenicea* and *Schoenicola platyura*, Benson *et al.* 1970, Brooke 1966) are believed to spend the dry season, but on the contrary is to the northward (see above).

Southern Malawi and adjacent Mozambique birds exhibit no obvious pattern and there may be some confusion as Clancey (1959) considers some southern Malawi birds *intensa*. Belcher (1930) records nests at Soche, near Blantyre, on 16th and 24th November. Fifty-three of the 56 birds from eastern Rhodesia and Gorongoza Mt. (Mozambique) fall in the period September to April and 17 records of egg-laying fall in the period October to January (R. K. Brooke *in litt.*). Correlated with this, 27 records of *hylophona* from the Mozambique littoral fall between April and August. The altitudinal movement of eastern Rhodesia birds to the Mozambique littoral in the cold weather (dry season) is thus well established although Irwin (1957) recorded it on the Pungwe River at *c.* 680 m in both November and July.

C. n. egregior

A confusing taxon which is presumably resident. Records are too few to analyse and they are rather widely spread: mainly the Mozambique littoral but also the Zambezi River below Chirundu (both sides) and the Limpopo River (Rhodesia).

C. n. natalensis

For a fuller discussion of movements in this form see Oatley (1959, 1966). A non-breeding visitor to the Mozambique littoral with 7 out of 8 specimens between April and September. The anomalous January specimen is "a pale bird like the ones from Natal" (Mrs. E. H. Stickney *in litt.*) so that it presumably belongs here. Nominate *natalensis* should be in its breeding area (mainly Natal) from October to April which correlates well with all but one of the Mozambique birds. There is also a bird from the Limpopo River, Rhodesia in July. It is worth noting that Clancey (1967) collected wintering *hylophona* and *natalensis* alongside *egregior* near Macia, southern Mozambique in September.

C. n. larischi

An examination of birds from south of 12° S shows that all 13 fall in the period 30th September-5th February although no obvious pattern is apparent in the remaining 39 birds. It may well be that those breeding south of 12° S (in Mossamedes and Huila, Angola) move north in the dry season (see above, *hylophona*, Zambia) but that birds breeding north of 12° S are largely resident. The anomalous Yaoundé bird (on 25th March) could be explained as "overshooting" on its journey north but this is speculative. The four plots in Hall & Moreau (1970) north of 5° N and between 15° and 25° E must be disregarded (Hall *in litt.*).

Traylor (1962) considers a male from Brazzaville similar to his east Angola birds (i.e. *hylophona*). As this locality is well within the range of *larischi* and the late Dr. A. De Roo (*in litt.*) considers a bird from nearby Kinshasa *larischi*, these specimens, and two others from Brazzaville, are listed as *larischi* in the Table.

Summary and Conclusions

Cosspyha natalensis is wholly or partly migratory in several parts of its somewhat disjointed range so that its breeding range is still more fragmented. Birds breeding in extreme southern and south-western Zambia, and adjacent border areas of Rhodesia and Angola, move north of 12° S in the dry season as probably do the birds of Mossamedes and Huila in western Angola. Birds breeding in eastern Rhodesia and on Gorongoza Mt. move eastwards into the Mozambique littoral in the cold weather (dry season) as do some birds from eastern South Africa and, perhaps, some birds from southern Malawi There may also be a resident form in the Mozambique littoral.

Elsewhere in eastern Africa, north to about 8° N, there are probably movements in most areas but these are not clear-cut and are hence poorly understood. Ecological explanations are lacking. The virtual absence of birds in western Tanzania, southern Uganda, Kivu, Ruanda and Burundi from December to May, together with evidence of movements in the Moshi/Amani area in May/June, indicates a long-distance movement of some sort, but an off-season area cannot be found. Some birds breeding in central Uganda may move north and north-east into southern Sudan and southern Ethiopia after breeding while coastal Kenya and Somalia birds may have a partial movement north or inland (along the Tana and Juba rivers) from about December to April.

This study is based almost entirely on an analysis of dated specimens by months and some conclusions are very tentative, especially for eastern Africa. They should be substantiated or refuted by residents observing its disappearance from a particular locality; by obtaining definite breeding records; and by ringing as many as possible, both for recoveries and for weight changes.

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I am very grateful to the following who supplied data on the specimens in the institutions shown in parenthesis after their names: Prof. J. Berlioz (Muséum National d'Histoire Naturelle, Paris), G. M. Bond (Smithsonian Inst.), P. A. Clancey (Durban Museum), Mrs. M. H. Clench (Carnegie Museum, Pittsburg), the late Dr. A. De Roo (Musée de l'Afrique Centrale, Tervuren), R. J. Dowsett (National Museum, Livingstone), Dr. F. B. Gill (Academy of Natural Sciences, Philadelphia), M. P. Stuart Irwin (National Museum, Bulawayo), H. D. Jackson (National Museum, Umtali), Miss H. Lapham (American Museum of Natural History), G. F. Mees (Leiden Museum), Dr. G. Mauersberger (Zoologisches Museum, Berlin), Dr. R. B. Payne (Museum of Zoology, University of Michigan), Dr. R. A. Paynter (Museum of Comparative Zoology, Harvard), Dr. A. A. da Rosa Pinto (Instituto de Investigaçao Cientifica de Angola), Dr. F. Salomonsen (Universitetets Zoologiske Museum, Copenhagen), K. E. Stager (Los Angeles County Museum), Mrs. E. H. Stickney (Peabody Museum of Natural History), Major M. A. Traylor (Field Museum, Chicago), H. E. Wolters (Zoologisches Museum Alexander Koenig, Bonn), Prof. D. A. Zimmerman (Western New Mexico University). No reply was received from O. P. M. Prozesky (Transvaal Museum). I am also grateful to the Directors of the British Museum (Nat. Hist.) and the National Museum, Nairobi for allowing me access to their collections; to Dr. J. S. Ash and G. C. Backhurst for allowing me to use their Ethiopia and Kenya records respectively; to Mrs. B. P. Hall for supplying details for some of the plots in Hall & Moreau (1970); to Dr. A. Prigogine for supplying details of his specimens from the Congo; and to Prof. D. A. Zimmerman for allowing me to use his ringing data from Kenya.

References:

If published data were also supplied in a list of specimens the reference is not given. Those marked with an asterisk are data sources not mentioned in the text.

Belcher, C. F. 1919. Nesting of Uganda birds. *Journ. E. Afr. & Uganda Nat. Hist. Soc.* 15: 473–478.

Belcher, C. F. 1930. *The birds of Nyasaland.* London: Crosby, Lockwood.

*Benson, C. W. 1946. Notes on the birds of southern Abyssinia (part). Ibis 88: 180–205.

Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. S. 1970. Notes on the birds of Zambia: Part 5. *Arnoldia (Rhodesia)* 4 (40).

— in press. *The Birds of Zambia.* London: Collins.

Benson, C. W. & Irwin, M. P. S. 1967. A contribution to the ornithology of Zambia. *Zambia Mus. Papers*, No. 1.

Britton, P. L. 1970. Birds of the Balovale District of Zambia. *Ostrich* 41: 145–190.

Brooke, R. K. 1966. Is *Schoenicola platyura brevirostris* (Sundevall) a migrant? *Ostrich* 37: 214–215.

Cave, F. O. & Macdonald, J. D. 1955. *Birds of the Sudan.* Edinburgh & London: Oliver & Boyd.

Chapin, J. P. 1953. The Birds of the Belgian Congo: Part 3. *Bull. Amer. Mus. Nat. Hist.* 75A.

Clancey, P. A. 1959. The races of the Robin-Chat *Cossypha natalensis* Smith. *Bull. Brit. Orn. Cl.* 79: 60–65.

— 1964. A catalogue of birds of the South African sub-region. *Durb. Mus. Novit.* 7 (11).

— 1967. Critical comments on the subspecies of some birds from Zambia. *Durb. Mus. Novit.* 8 (9).

Dekeyser, P. L. & Derivot, J. H. 1966. Les oiseaux de l'Ouest Africain. *Initiations et etudes Africaines* 19.

Dowsett, R. J. 1966. A preliminary list of the birds of the Kafue Flats. *Puku* 4: 101–124.

Farkas, T. 1969. Notes on the biology and ethology of the Natal Robin *Cossypha natalensis*. *Ibis* 111: 281–292.

*Friedmann, H. & Loveridge, A. 1937. Notes on the ornithology of tropical East Africa. *Bull. Mus. Comp. Zool., Harv.* 81 (1).

Hall, B. P. 1959. A further note on variation in *Cossypha natalensis*. *Bull. Brit. Orn. Cl.* 79: 102.

Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation in African Passerine Birds.* London: British Museum (Nat. Hist.).

Irwin, M. P. S. 1957. Seasonal changes in altitude by some Southern Rhodesian birds. *Ibis* 99: 338–340.

Irwin, M. P. S. & Benson, C. W. 1967. Notes on the birds of Zambia: Part 3. *Arnoldia (Rhodesia)* 3(4).

Jackson, F. J. 1938. *The birds of Kenya Colony and the Uganda Protectorate.* London: Gurney & Jackson.

*Moltoni, E. 1936. Gli uccelli fino ad oggi notificati per la Somalia Italiana. *Atti Soc. Ital. Sci. Nat.* 75: 309–389.

Oatley, T. B. 1959. Notes on the genus *Cossypha*, with particular reference to *C. natalensis* Smith and *C. dichroa* (Gmelin). *Ostrich*, Suppl. 3: 426–434.

— 1966. Competition and local migration in some African Turdidae. *Ostrich*, Suppl. 6: 409–418.

Pakenham, R. H. W. 1948. Field notes on the birds of Zanzibar and Pemba Islands-Fifth Series. *Ibis* 90: 98–102.

Ripley, S. D. 1964. *In, Check-list of Birds of the World*, Vol. 10. Cambridge, Mass.: Harvard Un. Press.

Sclater, W. L. & Moreau, R. E. 1933. Taxonomic and field notes on some birds of north-eastern Tanganyika Territory (part). *Ibis* (13) 3: 1–33.

Traylor, M. A. 1962. Notes on the birds of Angola, passeres. *Publ. Cult. Comp. Cia. Diamant. Angola* 58: 53–142.

— 1965. A collection of birds from Barotseland and Bechuanaland. *Ibis* 107: 137–172.

*Tree, A. J. 1962. The birds of the Leopardshill area of the Zambezi Escarpment. *Ostrich* 33: 3–23.

*— 1966. Some recent bird observations from the North Kafue Basin. *Ostrich* 37: 30–36.

Urban, E. K. & Brown, L. H. 1971. *A check-list of the birds of Ethiopia.* Addis Ababa: Haile Selassie 1 Un. Press.

Vaughan, J. H. 1929–30. The birds of Zanzibar and Pemba. *Ibis* (12) 5: 577–608; (12) 6: 1–246.

*Verheyen, R. 1953. *Exploration du Parc National de l'Upemba.* Fasc. 19, Oiseaux. Bruxelles: Inst. Parcs. Nat. Congo Belge.

*Vincent, J. 1935. The birds of northern Portuguese East Africa, Part 8. *Ibis* (13) 5: 485–529.

White, C. M. N. 1962. *A revised check list of African shrikes* etc. Lusaka: Government Printer.

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Bulletin of the
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The six hundred and seventy-third meeting of the Club was held at the Criterion in Piccadilly, London, S.W.1 on Tuesday, 30th November, 1971 at 7 p.m.

Chairman: Sir Hugh Elliott, Bt., O.B.E.; present: 13 members and 6 guests.

The speaker was Dr. P. R. Grant who addressed the Club on "Variation in island birds", with particular reference to chaffinches in the Canary Islands and the Azores, illustrated his address with slides.

White throated Rail *Dryolimnas cuvieri* on Astove Atoll

by D. R. Stoddart

Received 30th September, 1971

Rails of the genus *Dryolimnas* formerly existed on all islands of the Aldabra group, though they have become extinct on Assumption, Cosmoledo and Astove and survive only (as *D. cuvieri aldabranus*) on Aldabra (Benson 1967: 72–74; Penny and Diamond 1971). *D. c. abbotti*, discovered on Assumption by Abbott in 1892 (Abbott 1893: 763; Ridgway 1895), was numerous there in 1906 (Nicoll 1906: 695; 1908: 111; Meade-Waldo 1908) and "very common" in 1908 (Fryer 1908; 1911: 433), though extinct by 1937 (Vesey-Fitzgerald 1940: 487). Both Abbott (in Ridgway 1895: 529) and Fryer (1911: 430) reported this rail on Cosmoledo, though Abbott did not visit the atoll and Fryer did not visit the island where it was said to be. Dupont (1907: 13) reported it to be extinct there in 1906, and it had disappeared by the time of Vesey-Fitzgerald's visit in 1937; there is a remote possibility that survivors still exist on South Island. On Astove, Abbott (in Ridgway 1895: 529) also reported the presence of rails, again without having visited the atoll. The Astove rail was reported to be extinct in 1906 by Dupont (1907: 13), but was seen and reported as *D. abbotti* in 1908 by Fryer (1911: 428).

Thus *D. c. aldabranus* still survives on Aldabra where it is now reasonably well known, and collections were made of *D. c. abbotti* before it became extinct on Assumption. The Cosmoledo record rests on hearsay reports in 1892 and 1908, and the Astove record on undocumented reports in 1892, 1906 and 1908. Fryer's extant journal of 1908 gives no further information on the Cosmoledo or Astove rails (Stoddart 1970).

A newly discovered description of a rail on Astove in 1836 is therefore of considerable interest. It was written by William Stirling, captain in the Bombay Army, passenger on the *Tiger* when it was wrecked on Astove while en route to Bombay on 12 August 1836. Stirling remained on Astove until 16 October, when taken on board the visiting whaler *Emma*. He maintained a daily journal, subsequently printed in a very small edition (Stirling 1843) for private circulation and now extremely rare. It contains many detailed descriptions of plants and animals, most of which were omitted in a later edited republication (Stirling 1931).

Stirling first saw the rail on 20 August, when he recorded "a bird like a moorhen, some of which we had seen at Tristan D'Achuna: they are numerous on the Island. They do not appear to be able to fly, nor do they run faster than a man" (1843: 31). (Stirling had visited Tristan da Cunha on 12 October 1835, and here refers to the gallinule *Porphyriornis nesiotis.*) On 26 August, on the seaward coast, east side of Astove, he again saw "one of the land birds, about the size of, and not unlike, a mina, before mentioned as not unlike a moorhen or rail" (1843: 42). Finally on 12 September he described a captured specimen: "One of the birds called by me a moorhen, was caught today: it is about the *size* of a partridge: bill an inch long, and well clear of the head feathers; tongue, thin, long, and rugged at the point; head and breast, as far as the legs, reddish brown; chin, white; under the rump and wings, and on the thighs, feathers barred with white; a few white feathers in the tail, which is short, and above like the back and wing coverts, dirty green; upper and lower mandible, nearly the same length, but the lower the shorter. They are very tame and came close up to the tents without fear. The men, who killed and ate some, say they are very good. Sometimes in walking through the most retired and lonely places, I found myself accompanied by these little birds: they run by my side like tame companions without fear, but they do not allow themselves to be caught" (1843: 68).

Mr. C. W. Benson has kindly re-examined skins of *D. cuvieri* in the Cambridge Museum of Zoology and informs me that Stirling's description is consistent with this species. It is unlikely that any fuller account of the White-throated Rail on Astove exists, and since it is certainly now extinct its subspecific status can no longer be determined. Both Dupont (1907: 43) and Fryer (1911: 428) referred it to the Assumption subspecies *D. c. abbotti*, distinguished from the Aldabran subspecies *D. c. aldabranus* only by colour differences (Benson 1967: 73). It remains to search South Island, Cosmoledo Atoll, for possible survivors of *Dryolimnas* on that atoll.

The discovery of Stirling's description followed from a conversation with the late M. Veevers-Carter on Astove Atoll in 1968. A full account of Stirling's observations, including other land and sea bird observations, is in course of publication elsewhere. I thank C. W. Benson for his interest and assistance.

References:

Abbott, W. L. 1893. Notes on the natural history of Aldabra, Assumption and Glorioso Islands, Indian Ocean. *Proc. U.S. natn. Mus.* 16: 759–764.

Benson, C. W. 1967. The birds of Aldabra and their status. *Atoll Res. Bull.* 118: 63–111.

Dupont, R. P. 1907. *Report on a visit of investigation to St. Pierre, Astove, Cosmoledo, Assumption and the Aldabra Group.* Victoria, Mahé: Government Printing Office.

Fryer, J. C. F. 1908. *Journal.* Manuscript.

Fryer, J. C. F. 1911. The structure and formation of Aldabra and neighbouring islands—with notes on their flora and fauna. *Trans. Linn. Soc. Lond.* (2) 14: 397–442.

Meade-Waldo, E. G. B. 1908. Abbott's Rail *Rallus abbotti. Avic. Mag.* 6: 219–221.

Nicoll, M. J. 1906. On the birds collected and observed during the voyage of the 'Valhalla', R.Y.S., from November 1905 to May 1906. *Ibis* (8) 6: 666–712.

Nicoll, M. J. 1908. *Three voyages of a naturalist, being an account of many little known islands in three oceans visited by the 'Valhalla' R.Y.S.* London: Witherby.

Penny, M. J. & Diamond, A. W. 1971. The White-throated Rail *Dryolimnas cuvieri* on Aldabra. *Phil. Trans. Roy. Soc. Lond.* B 260: 529–548.

Ridgway, R. 1895. On birds collected by Doctor W. L. Abbott on the Seychelles, Amirantes, Gloriosa, Assumption, Aldabra and adjacent islands, with notes on habits, etc., by the collector. *Proc. U.S. natn. Mus.* 18: 509–546.

Stirling, W. 1843. *Narrative of the wreck of the ship Tiger, of Liverpool, (Captain Edward Searight), on the desert island of Astova, on the morning of the 12th of August,* 1836. Exeter: printed by W. Roberts.

Stirling, W. 1931. Narrative of the wreck of the ship *Tiger* (1836). *Blue Peter* 11: 74–83, 150–157, 206–209, 261–265.

Stoddart, D. R., editor. 1970. Coral islands of the western Indian Ocean. *Atoll Res. Bull.* 136: 1–224.

Vesey-Fitzgerald, L. D. E. F. 1940. The birds of the Seychelles. 1. The endemic birds. *Ibis* (14) 4: 480–489; Appendix, Birds of the Aldabra Group, pp. 486–489.

Wing moult in the Pied Kingfisher *Ceryle rudis* (Linn.)

by R. J. Douthwaite

Received 10th August, 1971

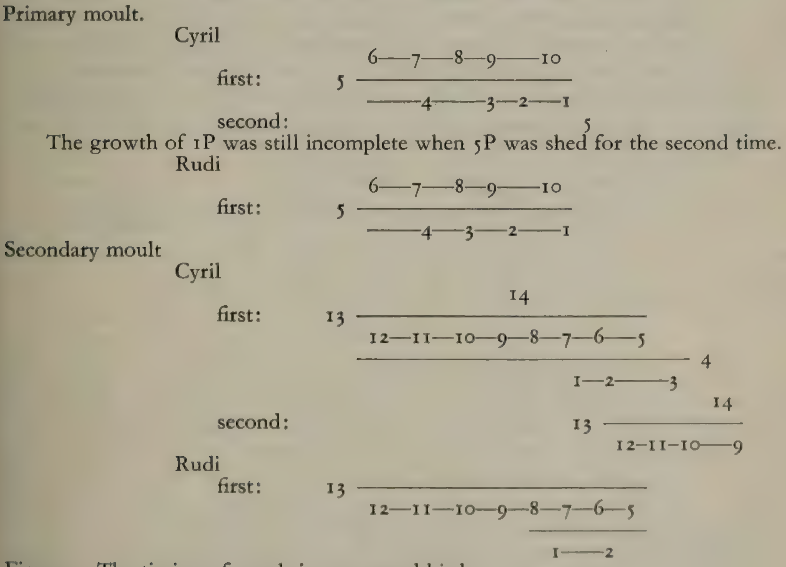
During ecological studies of the Pied Kingfisher in Uganda from October 1967 to November 1969 I was able to pay particular attention to the sequence in which wing feathers are moulted.

Data were obtained from periodic observation of two caged birds kept at the Zoology Department of Makerere University and from field observations of a wild population on the northern shore of Lake Victoria near Kampala.

Throughout this note the remiges are numbered from the mid-wing; "P" denotes one or more primary feathers and "S" one or more secondaries. One primary and two secondaries are not included in the analysis: 11P because it was too small to show any wear and 15S and 16S because they could not be identified with confidence on the fully feathered wing.

Evidence from captive birds: Two kingfishers (Cyril and Rudi) were hand-reared and kept in a large cage measuring eight feet by seven feet by eleven

Figure 1. Sequences of moult in the primaries and secondaries.



The growth of 1P was still incomplete when 5P was shed for the second time.

Figure 2. The timing of moult in two caged birds.

		Cyril	Rudi
Days from hatching to start of moult in	P:	182	181
	S:	158	161
Duration in days of first moult in	P:	193	180*
	S:	262	–
Days from start of first moult to start of second in	P:	176	–
	S:	146	–

*—an estimated figure since growth of 1P was incomplete.

feet high supplied with a water tank at ground level. The older bird (Cyril) was examined at intervals until it was 15 months old; the younger (Rudi) until it was 11 months old. The replacement sequences (Fig. 1.) follow the notation of Stresemann & Stresemann (1961a). The numbers refer to their respective primary or secondary and the grouping represents a temporal sequence reading from left to right. Thus moult in the primaries began with 5P, followed by 6P, 7P and then 4P. To simplify the pattern the innermost primaries are separated from the outermost by a horizontal line. The sequences of both birds were regular and almost identical. The most noticeable difference was in the overlap of the first and second moults of Cyril, which did not occur with Rudi. However, the moult of Rudi had progressed more quickly, which, if moult is initiated regularly, explains why no overlap occurred.

Wing moult began in the sixth month after hatching. That of the secondaries started earlier and finished later than that of the primaries. The timing of moult in the two birds is summarised in Fig. 2. The time between hatching and the start of the first moult was very similar for both birds. Furthermore, for the older bird the time between hatching and the start of the first moult was very similar to the time between the start of the first moult and the start of the second. There is thus a suggestion that moult may be initiated regularly.

Field observations: Along the shore of Lake Victoria in those areas where Pied Kingfishers nest and rest during the day moulted feathers are frequently found on the ground. Between August 1968 and October 1969 I was able to collect 156 remiges and these were identified by comparing them with a reference collection compiled from four specimens collected in the same area. No synchrony in the sequence of moult in the population was evident. However, from the collection of feathers and examination of captured birds, it was apparent that comparatively little moult occurred in the breeding season (Fig. 3). It is interesting to note that the moult of Cyril was interrupted for most of July and August, shortly after he had started his second moult. He was conspicuously aggresive at this time, an indication perhaps that he may have been in breeding condition.

Figure 3. Breeding and moulting activity in 1968 and 1969.

Month	Number of occupied nesting burrows	Number of birds trapped	Mean number of moulting remiges/bird.
January	6	1	4.0
February	6	0	—
March	17	0	—
April	50	0	—
May	96	5	0.6
June	131	13	0.6
July	109	1	0.0
August	69	1	0.0
September	51	1	0.0
October	29	3	3.0
November	8	2	7.0
December	2	1	2.0

Discussion: Stresemann & Stresemann (1961b) described the wing moult of the Pied Kingfisher as more or less irregular. Nevertheless their data are consistent with the findings of this study if the following hypothesis is accepted. Moult is regular, starting in the primaries with 5P and proceeding both ascendently and descendently. Successive moults are initiated regularly and completed irrespective of preceding and succeeding moults. However, moult is interrupted by the breeding season, and the rate at which each moult proceeds depends upon the number of other moults also in progress. Regular initiation, but prolonged interruption and slow moult, lead to an overlap of successive moults on the wing, giving the appearance of irregular moult at any instant of time. On the basis that the primary feathers are shed in the sequence: 5–6–7–4–8–3–9–2–10–1, the wings described by Stresemann & Stresemann (*op. cit.*) show regular moult overlapping to the following degree: six wings show one moult, 13 wings show two moults, 12 wings show three moults, three wings four moults and one wing five moults.

Although caged juveniles were able to complete their first primary moult in six months, the degree of moult in wild birds, together with the rate of growth of new feathers, suggest that from six to twelve months are necessary for the completion of one non-overlapping moult (Stresemanns' data and this study respectively).

Dorward (1962) showed that two or three moults can run simultaneously in the wing of the White Booby *Sula dactylactra* and that moult is interrupted by breeding irrespective of the stage reached. Similar situations have since been shown to occur in other Orders amongst tropical non-passerines (E. Stresemann, pers. comm.).

Acknowledgements: I am grateful to Professor E. Stresemann for commenting on this note at a preliminary stage, and to Dr. W. L. N. Tickell for his criticism of drafts. My work was financed by the Inter-University Council and Makerere University College Research Grants Committee.

References:
Dorward, D. F. 1962. Comparative biology of the White Booby and the Brown Booby *Sula* spp. at Ascension. *Ibis* 103b: 174–220.
Streseman, V. & E. 1961a. Die handschwingen-mauser der Kuckucke (*Cuculidae*). *Journ. Ornith.* 102: 317–352.
— 1961b. Die handschwingen-mauser der Eisvögel (*Alcedinidae*). *Journ. Ornith.* 102: 439–455.

Comments on the juvenile plumage of the Rufous-thighed Falconet

by Charles T. Collins & Dale R. Thompson

Received 30th July, 1971

The most recent review of the eagles, hawks and falcons of the world (Brown & Amadon 1968) records the juvenile plumage of the Red-legged or Rufous-thighed Falconet *Microhierax caerulescens* as being similar to that of the male. Thus it was noted with some surprise that there were two different plumages represented among eight of these falconets obtained for a study of existence energy requirements of this small carnivore (Collins & Brisbin unpublished). The birds were obtained in June 1970 from a commercial importer who got them from south-east Asia, possibly Thailand. One of the four males (sexed by smaller body size and weight) was in the typical plumage described for adults of this species (Brown & Amadon 1968: 759; Grossman & Hamlet 1964: 386) with the throat, lower belly and thighs a deep rufous or chestnut colour and a pale rufous wash to the white breast. The remaining seven falconets (three males and four females) had the breast and throat area white but had a strong rufous wash to the white band on the forehead and extending back over the eyes. This band is usually plain white in adults. One source (Grossman & Hamlet 1964) describes a juvenile plumage for this species which coincides with the differences noted here. The persistent begging behaviour of one of these birds tended to strengthen our belief that the group represented juvenile birds. The adult and three of the supposed juveniles were returned to California in September 1970 and during the next few months, while in the care of the junior author, underwent a moult of the body plumage. At this time all four of the falconets assumed a similar appearing typical adult plumage thus confirming that the "rufous-browed" plumage is that of the juveniles. Seemingly equally distinctive juvenile plumages have been described for other members of the genus *Microhierax* (Grossman & Hamlet 1964) and may well be true for all members of the genus.

Our work on the falconets has been supported by a grant from the United States Atomic Energy Commission AT(38–)310 to the University of Georgia. Copies of colour transparencies taken of a bird in this juvenile plumage will be deposited in the Los Angeles County Museum of Natural History and the American Museum of Natural History, New York.

References:

Brown, L. & Amadon, D. 1968. *Eagles, Hawks and Falcons of the World. Vol.* 2. New York: McGraw Hill.
Grossman, M. L. & Hamlet, J. 1964. *Birds of Prey of the World.* New York: Clarkson N. Potter.

Breeding of *Ploceus badius* (Cassin) in the Sudan

by G. R. Cunningham-van Someren

Received 4th July, 1971

According to Mackworth-Praed & Grant (1955), nothing is known of the breeding of *Ploceus badius*, and Dr. J. H. Crook (pers. comm.) confirms the absence of any record. The following notes therefore help to fill a gap in our knowledge.

Ploceus badius was found breeding in September 1961 and again in September 1963, at the height of the rainy season, at Es Suki and Shaseina, between 25 and 30 miles south-east of Sennar, at ca. 13°N., 33° 45′ E. This is in an area of two large cotton-growing schemes between the Blue Nile and the Dinker River, running roughly from 13° to 14° N., with an annual average rainfall of 574 mm in the north and 800 mm in the south, known as the Central Rainlands.

The first indication of breeding was by chance, when some Fulani children were seen carrying nests, crammed with eggs taken for eating. One of the children was persuaded to show me the site. Nesting was found to be taking place in vast areas of dense stands of tall Sorghum grass, in wet cotton fallows or in swampy areas, so that all nests were over water. The colonies were accordingly very difficult to locate, especially as the grass reached to a height of twelve feet. In the four colonies located, it was impossible to make counts of nests, although there must have been many hundreds per colony.

The nest is slung between, and supported by, two or three Sorghum stems at a height of five to seven feet. It is woven from grass blades and strips torn from the broad leaf-blades of Sorghum. It is roughly globular to vertical kidney-shape, closely woven to form a deep cup with a dome and porch entrance at one side near the top, between the supporting stems. The structural design is similar to that of *Quelea cardinalis* (Hartlaub), and the initial support structure appeared to be based on turns of grass around a grass stem at a node or leaf blade, to form a strong bridge. Nests were within a few feet of each other, but the colonies were scattered over a considerable area.

Eggs are very variable in colour and markings, and no two clutches appeared very similar. Ground-colours are of varying shades of blue, green and brown, to almost white, heavily or lightly spotted and speckled with shades of black, grey, brown, purplish or reddish. An approximate dimension is 22 × 16 mm. The clutch-size is two or three.

Birds at the colonies were very noisy, males displaying on the Sorghum stalks or around nests. The impression gained was that the species is monogamous.

Acknowledgement: Thanks are due to Dr. J. H. Crook for looking up references and records.

Reference:

Mackworth-Praed, C. W. & Grant, C. H. B. 1955. *African handbook of birds*, Series I, Vol. 2. London: Longmans.

Breeding of the Bat Hawk *Macheirhamphus alcinus* in Zambia

by J. F. R. Colebrook-Robjent

Received 8th August, 1971

The first recorded nest in Zambia of the Bat Hawk *Macheirhamphus alcinus anderssoni* was found on 14th October 1970. On that date a small African boy, Devison Phiri, reported finding a hawk's nest in the African Reserve, bordering the large farm where I worked in the Choma District of the Southern Province of Zambia. I was unable to visit the nest until it was almost dark. On arriving at the site the fairly large stick nest could be seen 35 feet up in a Mfuti tree *Brachystegia bohmii*. It was not until I had almost reached the nest, near the end of a large bough, that the sitting bird hurriedly left it, without being identified. The nest contained a single egg which was found to be badly damaged, undoubtedly due to the hawk's hurried departure. It was removed and replaced by a fowls' egg. I was unfortunately unable to revisit the nest and identify the owner until 22nd November. At mid-day on that date the hawk left the nest before I reached the tree. The bird was a Bat Hawk. The non-incubating bird was also in the same tree and they left together. On climbing to the nest I was attacked ferociously and repeatedly by the bird which had been sitting, presumably the female. My chicken's egg was still intact and was removed.

The site is a sparse copse of Mfuti trees not far from a school. The habitat is open part-like country, with scattered clumps of trees and secondary bush, in an expanse of wet vleis; the source of the Kalomo River. The altitude is 4450 feet.

The nest was over two feet wide, hardly lined and placed on a completely open, lateral branch. The egg contained a medium-sized embryo and was probably laid at the end of September. It is white, very rough, thin-shelled and nest-stained. The shape is blunt elliptical-ovate, i.e. fairly long and narrow, but rounded at both ends; a most unusual shape for a raptor's egg. It measures 64.9 x 46.9 mm. The egg-white was sent to Professor Charles G. Sibley of Yale University for analysis.

Fernando Poo Black Swift *Apus barbatus sladeniae* (Ogilvie-Grant) recorded from Nigeria

by Roy H. Parker

Received 20th July, 1971

Recently, the reference collection of bird skins in the Zoology Museum, University of Ibadan, Nigeria, was reorganized and moved into new accommodation. Shortly after this it was discovered that a specimen collected by F. C. Sibley on 19th March 1961, at Obudu Plateau, Eastern Nigeria (ca. 6° 40′ N., 9° 10′ E.), labelled *Apus apus* (L.) was not of this species. The bird was re-identified as a Fernando Poo Black Swift *Apus barbatus sladeniae* (Ogilvie-Grant). As the specimen was collected so far inland and only three specimens had previously been obtained from mainland Africa, the skin was sent to the British Museum (Nat. Hist.) for comparison, where P. R. Colston confirmed the identity. The bird was an adult female with the largest ovary measuring 6 mm in length. It weighed 45.8 g and had wing, bill and tarsus lengths of 177, 6.5 and 14 mm respectively. The depth of the tail-fork was 17 mm.

De Roo (1970) described a new race, *Apus barbatus serlei*, from the Bamenda Range, in south-western Cameroun, which is only about 90 miles from Obudu; therefore the specimen was sent to him for comparison with the type material of *serlei* and *sladeniae*. De Roo (pers. comm.) considered the Nigerian specimen was closest to the type of *Apus melanotus* Reichenow, which he had seen in the Berlin Museum, and which is generally considered synonymous with *sladeniae*.

This constitutes the first record of *sladeniae* from Nigeria and, as far as I am aware, the fourth authenticated record from the mainland of Africa, the others being Reichenow's type of *melanotus*, collected by S. Heims at Bakossi, south Cameroun, and two adult females from Mt. Moco in Angola (Brooke 1970). It is interesting to note that Good (1952) considered *sladeniae* to be very common all over south Cameroun, and far outnumbered any other swift observed. Serle (1955), however, in a review of Good's book points out that he was surprised that *A. apus* was not recorded by Good, as the reviewer considered it abundant in south Cameroun; he then suggests that some of Good's sight records of *sladeniae* could possibly refer to *apus*. Serle's view was later strengthened when Brooke & Traylor (1967) pointed out that the sixteen specimens Good collected in south Cameroun and identified as *sladeniae* were, in fact, *apus*. Moreover, it is significant that the two birds, collected by Serle, and re-named by De Roo (*op. cit.*), as *serlei* and the type specimen of *Apus barbatus glanvillei* Benson (1967), together with the Obudu specimen, had all been identified, in the hand, by experienced ornithologists as *A. apus*. From this evidence that there may be difficulties of identification, even at close quarters under ideal conditions, I strongly contend that all sight records of *Apus barbatus* in West Africa be disregarded.

The collection of this specimen so close to the type locality of *serlei* tends to support De Roo's (*op. cit.*) contention that *sladeniae* should be considered a separate species from *barbatus* and that these two, together with *Apus bradfieldi* (Roberts), should form a superspecies group. Brooke (*op. cit.*) is also inclined to support this, but considers that *Apus berliozi* Ripley should be included in the group.

Acknowledgements

I am especially grateful to the late Dr. A. De Roo for his critical examination of the Nigerian specimen and for all the helpful comments he made regarding it, and also to P. R. Colston who initially compared the specimen in the British Museum (Nat. Hist.).

References:

Benson, C. W. 1967. A new subspecies of Black Swift *Apus barbatus* from Sierra Leone. *Bull. Brit. Orn. Cl.* 87: 125–126.

Brooke, R. K. 1970. Geographical variation and distribution in *Apus barbatus, A. bradfieldi* and *A. niansae. Durban. Mus. Novit.* 8(19): 363–374.

Brooke, R. K. & Traylor, M. A. 1967. *Apus apus apus* in the Cameroons. *Bull. Brit. Orn. Cl.* 87: 124–125.

De Roo, A. 1970. A new race of African Black Swift *Apus barbatus* (Sclater) from the Republic of Cameroon. *Rev. Zool. Bot. Afr.* 81 (1–2): 156–162.

Good, A. I. 1952. The Birds of French Cameroon. *Mem. Inst. Franc. Afr. Noire, Sci. Nat.* 2. Part 1. Douala: Centre du Cameroun.

Serle, W. 1955. Book Review. *Nig. Field* 20 (3): 133–134.

A non-eumelanic Red-eyed Dove *Streptopelia semitorquata*

by Peter F. Woodall

Received 4th August, 1971

Introduction: There is an aberrant Red-eyed Dove *Streptopelia semitorquata* in the Queen Victoria Museum, Salisbury, Rhodesia. This specimen, in which the grey colour of the normal plumage is absent, corresponds with the non-eumelanic or fawn plumage type as described by Harrison (1963). It was a female in non-breeding condition and was collected 20 miles north of Umvukwes Village, Rhodesia, at 16° 43′ S., 30° 53′ E. on 12th August 1965 and was donated to the Museum by Mrs. P. McLachlan.

Description: A description of this variant plumage is given below while the

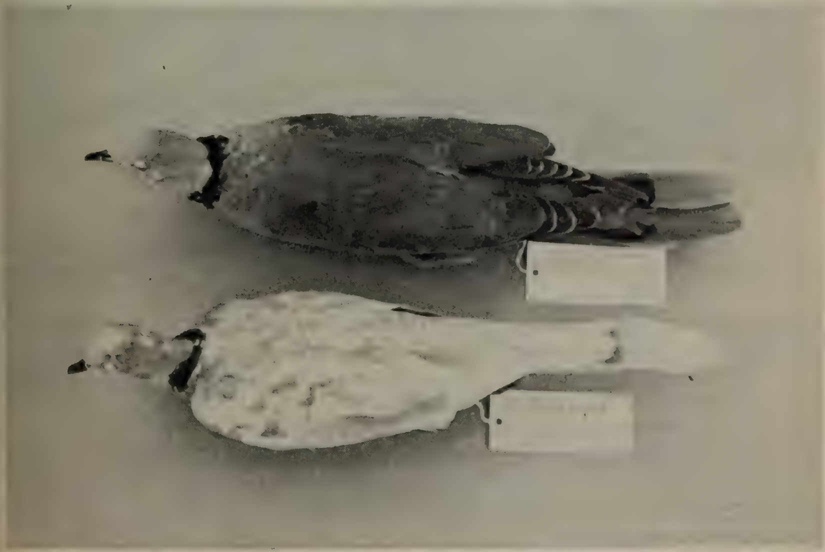


Plate. Red-eyed Dove, non-eumelanic and normal.

accompanying plate clearly shows the differences in the plumage compared with a normal specimen.

The forehead and crown are white with a few scattered brown feathers; the nape and neck are a pronounced vinous colour; the collar being lighter than in a normal specimen, and composed of very dark brown rather than black feathers, but is still quite prominent; the mantle, back and rump have a mottled appearance formed by light tawny-brown feathers, many of which have white tips of varying size. The underparts differ little from the normal plumage but are more vinous on the breast and very pale grey on the belly and under-tail coverts. The wing feathers, like the back, are light brown and show a variable amount of white tipping.

Discussion: This would appear to be the first record of non-eumelanism in this species although Goodwin (1959) has reported a complete albino. Much of the plumage is composed of feathers which are brown at the base and with white tips. This generally white appearance would seem to have been the result of fading and abrasion, as suggested by Harrison (1963). This is supported by wing moult, the 7th primary (from the carpal joint outwards) on both sides being half grown and completely brown. The proximal new primaries all have white tips, but the distal older primaries show considerably more white.

In general the plumage agrees well with the non-eumelanic type and is not simply a case of dilution, the vinous colour on the nape and breast showing no reduction and in fact appears more prominent than in a normal bird, due to the lack of any grey colour. However, it is rather anomalous that the abdomen and under-tail coverts are light grey, albeit considerably lighter than in the normal bird.

Acknowledgments: I am very grateful to Mr. H. D. Jackson, Keeper of Zoology, Umtali Museum, for first bringing this specimen to my attention. I must also express my grateful thanks to Mr. P. Hulley, University of Rhodesia, for valuable discussions; Mr. R. Boulton, Atlantica Ecological Research Station, for advice and the loan of references; and Mr. M. P. Stuart Irwin, Keeper of Ornithology, National Museum, Bulawayo, Rhodesia, for criticising the draft.

References:

Goodwin, D. 1959. Some colour varieties of wild pigeons. *Bull. Brit. Orn. Cl.* 79: 3–9.
Harrison, C. J. O. 1963. Grey and fawn variant plumages. *Bird Study* 10(4): 219–233.

[The cost of reproduction of the plate in the above paper will be borne by the author—Ed.]

Ten colour varieties of the Eurasian Wigeon

by James M. Harrison & Jeffery G. Harrison

Received 7th July, 1971

Sage (1963 and pers. comm.) only knows of six examples of the Eurasian Wigeon *Anas penelope* Linnaeus exhibiting abnormally pale plumage. We can now describe four more examples, two of which were wild, two hand reared siblings. All four are in the Harrison Zoological Museum. They are illustrated in Plates 1 and 2, and details are as follows:

(1) An adult drake (second from left in plates) found moribund 12th May 1965, Chetney Marshes (Medway Estuary), Kent. It died subsequently of aspergillosis. It presents the following abnormalities, based on the classification of Rensch (1925):—

(a) partial symmetric albinism of all primaries, and a wholly white tail;

(b) non-eumelanic schizochroism, producing a mottled pinkish fawn and white appearance. The white shoulder patches seem to show that it is adult.

As with all birds in which melanin deposition is deficient, the feathers show excessive wear. The iris was of normal colour; the bill pale pinkish grey, nail and tip pale sepia; the tarsi and feet pale ochreous flesh, webs a little darker.

(2) A first winter male (extreme right in plates), died in captivity 17th October 1965. It shows in some areas a condition of colour dilution, resulting in a tendency to pinkish brown; in other areas it shows true albinism. The iris was of normal colour; the bill bluish, dusky towards tip, nail darker; the tarsi and feet pale grey, webs and claws darker.

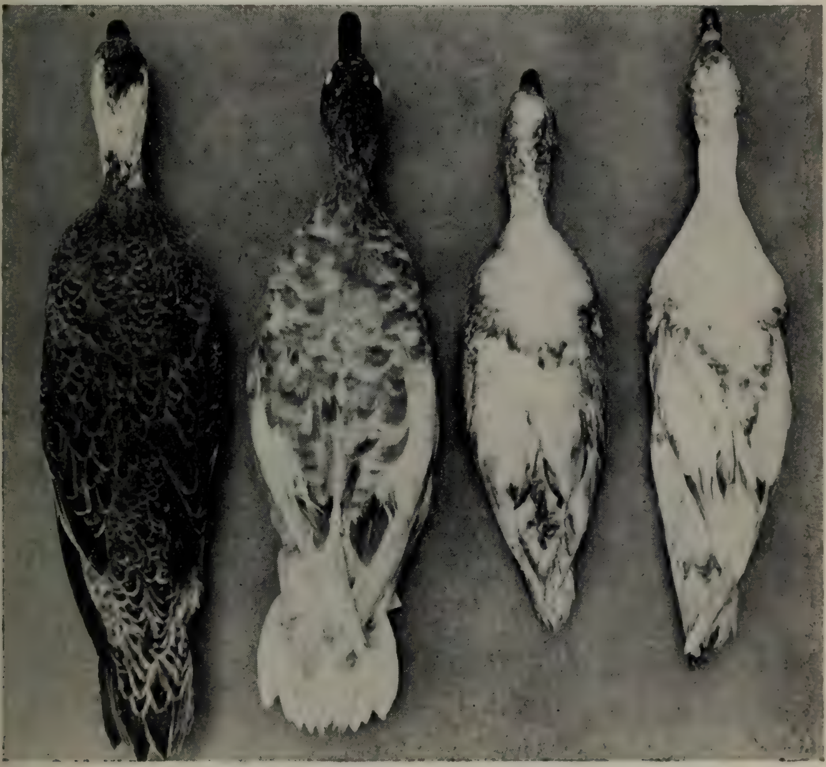


Plate 1. Colour varieties of Eurasian Wigeon (upperside).

(3) A first winter male (second from right in plates), died in captivity 25th August 1965. This bird is a sibling with the last one, number (2), compared with which it shows:—

(a) more pale chestnut on the head, neck and breast;

(b) more melanin deposition in the wings, all the flight feathers being delineated by dark margins, as also are the primary coverts, while the scapulars are more broadly outlined and the longest show dusky tips.

The iris was of normal colour; the bill bluish with tip dusky; the tarsi and feet grey, webs and claws dusky.

(4) A first year female (extreme left in plates), wild shot, 6th December 1968, Chesil Beach, Dorset. It is in normal plumage except for partial albinism of the head and neck.

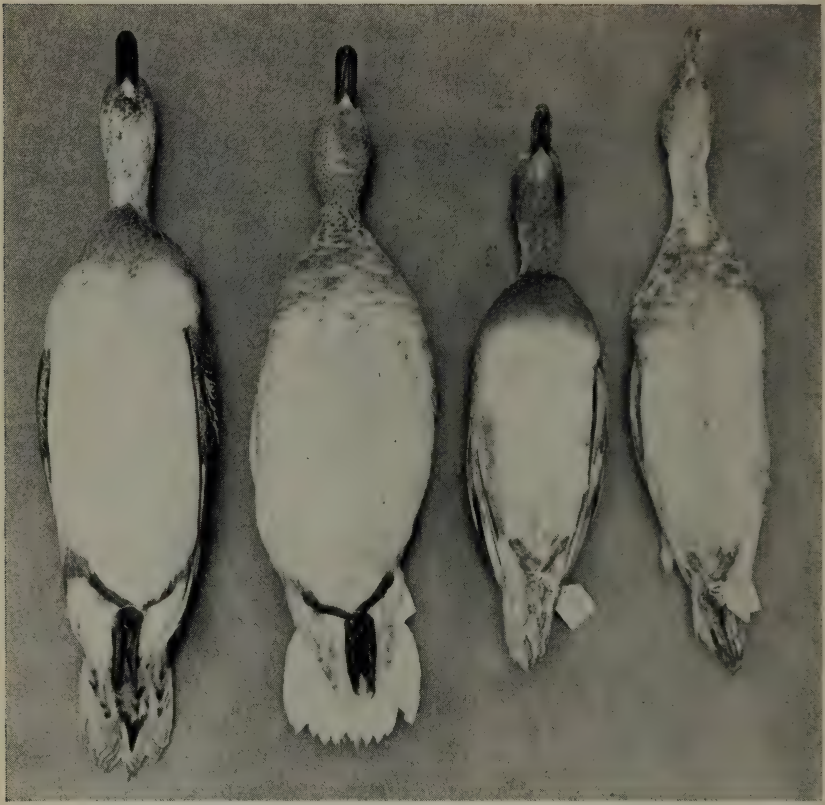


Plate 2. Colour varieties of Eurasian Wigeon (underside); same sequence of specimens as in Plate 1.

The six abnormal examples known to Sage (*cit. supra*) can be added to the foregoing four:

(5) Sex and age indet., January 1861, Wareham, Dorset, a pure white bird, shot.

(6) Sex and age indet., January/February 1880, Carham, River Tweed, Northumberland, a pure white bird, seen.

(7) Female, age indet., January 1912, off coast of Holland, a buff coloured bird, shot by H. L. Popham.

(8) Sex and age indet., 21st January 1924, West Mersea, Essex, a light coloured bird, shot by J. B. Nichols.

(9) Female, age indet., 23rd January 1950, Hamilton, Lanarkshire, Scotland, pale whitish buff above, pure white below and on the speculum; seen in wild by Prof. M. F. M. Meiklejohn, likewise the next.

(10) Female, age indet., 20th October and 8th December 1950, same locality as (9), head and neck normal, but upperparts pale whitish buff, with whitish tips to secondaries (i.e. speculum partially white).

Discussion: These ten examples fall into three groups:—

(a) Partial albinism, as in example (4).

(b) Leucism, involving a total loss of feather pigment, as in examples (5) and (6). Both are very old records, and unfortunately no further details are available.

(c) Non-eumelanic schizochroism, as in the remaining examples. Examples (2) and (3) show some increase in eumelanism. Examples (9) and (10) seem exceptional in that the latter showed partial albinism of the speculum, while in the latter albinism of the speculum was complete. These two may have been siblings.

Acknowledgements: We are grateful to Murray Johnstone, who reared examples (2) and (3), and to Frank Clayton, who sent us example (4). For particulars of examples (5) to (10) we are indebted to Bryan Sage. Once again our thanks are due to Dr. Pamela Harrison for the photographs.

References:
Rensch, B. 1925. Die farbaberrationen der vögel. *Journ. Ornith.* 73: 514–539.
Sage, B. L. 1963. The incidence of albinism and melanism in British birds. *Brit. Birds* 56: 409–416.

(The cost of reproduction of the plates in the above paper will be borne by the authors—*Ed.*)

Observations on *Egretta vinaceigula*

by C. J. Vernon

Received 12th August, 1971

Benson, Brooke & Irwin (1971) conclude that *Egretta vinaceigula* is a good species and not merely a form of *E. ardesiaca*. During July 1971, in the Chobe Game Reserve, Botswana, I frequently observed *E. vinaceigula* and consequently can give support to their contention. I am grateful to them for a sight of their manuscript, for discussions, and for urging that my note be also published.

Egretta vinaceigula was frequently observed alongside other similar sized herons, *E. garzetta*, *E. ardesiaca*, *Ardeola ibis*, *A. ralloides* and *Butorides rufiventris*, on the flood-plains of the Chobe River. The river level was low and dropping, and consequently many lagoons and pans were drying out. This had resulted in the deposition of aquatic vegetation on the ground, and food sources had been exposed which had previously been protected by the water. In such areas there were large congregations of feeding birds, including such species as *Phalacrocorax africanus*, *Pelecanus* spp., *Egretta alba*, *Anastomus lamelligerus*, *Ibis ibis*, *Threskiornis aethiopicus*, *Platalea alba*, *Sarkidiornis melanotos* and *Anas erythrorhynchos* as well as the above mentioned herons.

Superficially, *Egretta vinaceigula* resembled both *E. ardesiaca* and *E. garzetta*. At a distance its coloration caused confusion with *E. ardesiaca*, but at no other time were the two species confused, and colour differences as noted by myself are recorded by Benson *et al.* (1971). *E. ardesiaca* has a similar shape to that of *Ardeola ibis*, *ralloides* and *Butorides rufiventris* in that it has relatively short legs and a short neck. In contrast, *E. vinaceigula* has a similar shape to that of *E. garzetta* both having relatively long legs and a long slender neck. If the two species did not differ in size, one might believe that *E. vinaceigula* was merely a grey phase of *E. garzetta*.

At no time was *Egretta vinaceigula* seen to spread its wings to form a canopy over the water while feeding as does *E. ardesiaca*. Instead its feeding behaviour was comparable with that of *E. garzetta*. Both species feed by either standing motionless or by stalking and then stabbing at prey. But *E. vinaceigula* was not seen chasing prey nor stirring the water with its feet to disturb prey as is described for *E. garzetta* by Benson & Penny (1971).

Egretta ardesiaca, *E. garzetta*, *E. vinaceigula* and *Ardeola ralloides* were found together, and separate from *A. ibis*, which occurred on dry ground, and *B. rufiventris*, which frequented small lagoons and pans where there were trees. It is difficult to define any habitat difference between *E. garzetta* and *vinaceigula* except to suggest that *garzetta* was less frequently seen out of the water, and waded in deeper water. There was little difference in the social nature of the four species. They all tended to be solitary, though were sometimes fairly close together, and frequently occurred adjacent to the feeding assemblies mentioned earlier. No interaction was noted between any of these herons.

My observations at Chobe suggest that this river complex is capable of providing extremely rich food supplies for large wading birds, and it is significant to note that *E. vinaceigula* has only been recorded from such areas of swamps and seasonally inundated flood-plains (see Benson *et al.* 1971). Further, as T. N. Liversidge (pers. comm.) notes that this bird is absent from the Chobe Game Reserve during the rains, it is quite possible that *E. vinaceigula* has seasonal movements in order to live in the same type of habitat all the year round. By examining the measurements of the small, similar sized, diurnal herons occurring in the Chobe Game Reserve it might be possible to make a more precise, but preliminary, definition of the niche that *E. vinaceigula* occupies.

The measurements (see Table) used to make comparisons between *Ardeola ibis*, *A. ralloides*, *Butorides rufiventris*, *Egretta ardesiaca* and *E. garzetta* are taken from McLachlan & Liversidge (1970), while those of *E. vinaceigula* were received from C. W. Benson. In all cases averages of

TABLE

Comparative tarsus and culmen measurements of six herons.

Species	*Mean measurements in mm.*			*Ratios*	
	Wing	*Tarsus*	*Culmen (from base)*	$\frac{100 \times tarsus}{wing}$	$\frac{100 \times culmen}{wing}$
Ardeola ibis	242	75	51	30.8	21.2
Ardeola ralloides	217	59	65	27.2	30.0
Butorides rufiventris	216	57	61	26.4	28.4
Egretta ardesiaca	255	85	69	33.2	27.3
Egretta garzetta	272	104	88	38.4	32.4
Egretta vinaceigula	235	85	66	36.4	28.1

Notes—The tarsus mean (113.6) for *E. garzetta* in McLachlan & Liversidge (1970) is clearly a misprint for 103.6.

Benson *et al.* (1971) give culmen lengths from the posterior of the nostril slit. Benson (pers. comm.) gives lengths from base for the same three specimens of *E. vinaceigula* as 64, 67, 67 mm.

The tarsus/wing ratio for *E. ardesiaca* from the figures in Benson *et al.* (1971) works out at 32.0 for the 18 African males, or 33.0 for the specimens as a whole. These figures agree well with that above, derived from McLachlan & Liversidge (1970).

series or means of extremes are used. As the weights of all these species are not known, wing measurements are used as an indication of relative size. Culmen and tarsus measurements are used as indications of adaptations to feeding niches. It is appreciated that this may be a gross simplification and any conclusions drawn only speculative. Nevertheless they may provide a basis for further investigation.

In comparing tarsus lengths, it is apparent that the differences can be correlated with modes of feeding. *Ardeola ralloides* and *Butorides rufiventris*, which remain stationary when feeding, have the shortest tarsi, while competition between these two is avoided by different habitat preferences. The terrestrial *A. ibis* has a tarsus of medium length, while that of *E. ardesiaca* is a little longer. The remaining two, *E. garzetta* and *vinaceigula*, have relatively the longest tarsi, and this can be linked with their wading habits. The absolute figure for *E. vinaceigula* is the same as that for *ardesiaca*. But relative to size it approaches that for *garzetta*, which has the longest tarsus both absolutely and relatively. It has been mentioned above that *vinaceigula* wades more frequently in shallower waters than *garzetta*. But perhaps *E. ardesiaca* tends to wade in still shallower ones.

Similarly, in comparing culmen lengths, a superficial correlation can be made between the length of the culmen and the mobility of prey and the mode in which it is taken. Thus, at the one extreme, the long bill of *E. garzetta* is used to strike at rapidly moving prey, and at the other, the short bill of *A. ibis* is used to snatch slow moving or motionless prey. *E. vinaceigula* has a bill of medium length, and therefore possibly takes both still and fast-moving prey.

Summary: E. vinaceigula is a good species. It appears to occupy a niche which is only created in marshes and flood-plains, and this helps explain its limited distribution. Both in habits and behaviour it most closely resembles *E. garzetta*, rather than *E. ardesiaca*, with which it has often been confused in the past, from an examination of museum specimens.

Acknowledgement: I am grateful to C. W. Benson for assistance in the preparation of this paper.

References:

Benson, C. W., Brooke, R. K. & Irwin, M. P. Stuart. 1971. The Slatey Egret *Egretta vinaceigula* is a good species. *Bull. Brit. Orn. Cl.* 91: 131-133

Benson, C. W. & Penny, M. J. 1971. The land birds of Aldabra. *Phil. Trans. Roy. Soc. Lond.* B 260: 417-527.

McLachlan, G. R. & Liversidge, R. 1970. *Roberts birds of South Africa.* Cape Town: John Voelcker Bird Book Fund.

A specimen of *Coua delalandei* (Temminck) (Cuculidae)

by C. W. Benson & E. Schüz

Received 6th September, 1971

Greenway (1967) does not mention the existence of any specimen of *Coua delalandei* in Stuttgart. However, in the Staatliches Museum für Naturkunde (Schloss Rosenstein) there is a well mounted specimen of this little known species, which would appear to be extinct (Peters 1940; Greenway 1967; Luther 1970). It is inscribed "male, no. 944, Madagaskar, coll. v. Ludwig 1837".

The history of this specimen is somewhat problematical. Carl von Ludwig, of Sulz am Neckar, near Stuttgart (1784–1846), arrived in 1806 in Cape Town, and prospered financially. He acquired specimens, which he presented to various museums, including the Königliche Naturalien-Kabinet in Stuttgart and the South Africa Museum in Cape Town (Bradlow 1965; Schüz 1966). These collections did not consist only of South African birds, but included some from Madagascar, the Far East, Australia and South America. Cape Town, on a regular sea route, offered good opportunities for exchange of specimens. It is evident that von Ludwig acquired specimens from far flung localities, and "coll. v. Ludwig" in no way means that he personally collected this specimen of *C. delalandei*. Indeed we are sure that he never visited Madagascar; therefore his name is not mentioned in the historical review of the ornithology of that island by Rand (1936: 150–157). The year "1837" merely indicates the time of arrival of the specimen in Stuttgart. According to the catalogue of the Stuttgart Museum, it was in a collection received in April 1837. Besides some mammals, there were 1,427 birds, all of which were in due course mounted, and 33 of which were from Madagascar. But most of these specimens have disappeared; some during the last century, while others were destroyed by fire during the 1939–45 war. However, 479 birds survive, including no. 944, the *Coua delalandei*, on which our attention became focused during a recent visit by C. W. B. to Stuttgart.

To conclude, neither Jouanin (1962) nor Greenway (1967) could find evidence of any specimen of *C. delalandei* having been collected since 1834. Although there is no certainty, the specimen in Stuttgart could well be the most recent one.

References:
Bradlow, F. R. 1965. *Baron von Ludwig and the Ludwig's Burg Garden.* Cape Town & Amsterdam: Balkema.
Greenway, J. C. 1967. *Extinct and vanishing birds of the world.* Revised ed'n. New York: Dover Publications.
Jouanin, C. 1962. Inventaire des oiseaux éteints ou en voie d'extinction conservés au Muséum de Paris. *Terre Vie* 109: 257–301.
Luther, D. 1970. *Die ausgestorbenen vogel der welt.* Wittenberg Lutherstadt: Neue Brehm Bücherei no. 424.
Peters, J. L. 1940. *Check-list of birds of the world.* 4. Cambridge, Mass.: Mus. Comp. Zool. Harv.
Rand, A. L. 1936. The distribution and habits of Madagascar birds. *Bull. Amer. Mus. Nat. Hist.* 72(5): 143–499.
Schüz, E. 1966. Ornithological relations between the Stuttgart Natural History Museum and South Africa. *Ostrich* suppl. 6: 9–12.

Some further type material in Cambridge

by C. W. Benson

Received 2nd September, 1971

(1) From the Malagasy Region

In *Bull. Brit. Orn. Cl.*, 1971: 4–6 I listed type material of 27 forms, and (*ibid.*, 1971: 63) referred to type material of another, viz. *Coracina newtoni*. For sake of completion, and with deference to Recommendation 72D(4) of the International Code of Zoological Nomenclature, the following two must be added, although the relevant names have long been in disuse:

Hylophorba ruticilla P. L. Sclater (*Proc. Zool. Soc. Lond.*, 1865: 326): There is a specimen so marked by Prof. A. Newton, with the further inscription "*exempl. typ.* Forest near Anooivarika, Madagascar. F. Plant". It was evidently the only specimen which Sclater had before him, and it is a female of *Calicalicus madagascariensis* (Linnaeus), family Vangidae, cat. no. 27/Van/1/a/1. The synonymy was correctly indicated by Gadow (*Cat. birds Brit. Mus.* 8, 1883: 119).

Zosterops cinerea Swainson (*Anim. in Menag.*, 1837: 294): There is a specimen marked with this name in Swainson's handwriting, cat. no. 27/Zos/11/g/13. As correctly indicated by Sharpe (*Cat. birds Brit. Mus.* 9, 1884: 194), it is a synonym of *Z. mauritiana* (Gmelin), now regarded as a subspecies of *Z. borbonica* (Gmelin).

(2) *Sylvia annulosa* Swainson

Moreau (in *Check-list birds world* 12, 1967: 335) follows W. L. Sclater (*Ibis*, 1911: 280) in placing *Sylvia annulosa* Swainson (*Zool. Ill.* 3, 1823, pl. 164) in the synonymy of *Zosterops m. maderaspatana* (Linnaeus). There is a Swainson specimen, cat. no. 27/Zos/11/aa/5, inscribed by him as *Sylvicola annulosa*, locality "Australia". It has the mantle grey, and is a *Z. lateralis*, possibly *Z. l. lateralis* (Latham). It was seen by Dr. D. L. Serventy and identified by him as this species in December 1966. It would appear to be the source of *Sylvia annulosa* var. *B** Swainson (*op. cit.*, pl. 165), which he states is the "New Holland variety". This is despite the fact that in his accompanying description Swainson remarks "Size of the Wood Wren". The wing length of the specimen is 61 mm, whereas the average for *Phylloscopus sibilatrix* (Bechstein) is about 75 mm. Nevertheless, comparison of skins of this warbler (including a Swainson one) and of *Z. l. lateralis* does not suggest any appreciable difference in size between the two.

There are two green mantled specimens, cat. nos. 27/Zos/11/fff/5 and 10 (no. 10 was at one time mounted), and identifiable with *Z. virens capensis* Sundevall (in fact Clancey, *Ibis*, 1967: 326, regards *capensis*, *pallida* and *virens* as all conspecific), of the south-western Cape Province. Although neither bears any inscription by Swainson, both bear a printed University Museum label marked "Swainson collection". One or the other, possibly both, were probably used by Swainson in describing the *Sylvia annulosa* illustrated in pl. 164, which it would appear is a synonym of *Z. virens capensis*, with the *Sylvia annulosa* var. *B** illustrated in pl. 165 a synonym of *Z. l. lateralis*. There is no question of either being a synonym of *Z. m. maderaspatana*. Contra W. L. Sclater (*op. cit.*), Swainson's pl. 164 agrees much better with specimens of *Z. virens capensis* than of *Z. m. maderaspatana*, which is whiter, less greyish on the chest and abdomen, and with the flanks grey rather than chestnut. A similar difference from *Z. v. capensis* also applies to the other forms of *Z. maderaspatana* listed by Moreau (*op. cit.*). Nor does Swainson's accompanying description in any way indicate that, contrary to the plate, the subject might in reality be some form of *Z. maderaspatana*.

I am grateful to R. Wagstaffe for reading and commenting on a first draft of this note. He agrees with the above findings. Furthermore he reminded me of those of Sharpe (*Cat. birds Brit. Mus.* 9, 1884), which are also in agreement. On p. 155 Sharpe places Swainson's *S. annulosa* var. *B** as a synonym of *Dacnis westernensis* Quoy & Gaimard, which in turn is a synonym of *Z. l. lateralis* (*fide* Mayr, in *Check-list birds world* 12, 1967: 316). On p. 171 he places *S. annulosa* as a synonym of *Z. capensis*. Indeed it is likely that Sharpe examined the Swainson specimen discussed above. According to a letter dated 26th July 1870 from O. Salvin to J. W. Clark, Superintendent of the University Museum of Zoology, Cambridge, he and Sharpe were then examining the Swainson bird collections in the museum and compiling a catalogue for printing. Unfortunately not even an MS copy of such a catalogue appears to exist.

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* The 'B' in Swainson's *Sylvia annulosa* var. B above was originally printed as a Greek beta—Ed.

The occurrence of the Madagascar Pratincole in the South-African sub-region

by C. W. Benson

Received 2nd August, 1971

I recently found in the Jardine Collection, received in the University Museum of Zoology, Cambridge, in 1886, a specimen of a Paradise Flycatcher labelled "Zambezi Kirk". It agrees in all respects with females of *Terpsiphone mutata vulpina* (E. Newton), of Anjouan in the Comoro Islands. It has wing 70, tail 74, culmen (from base of skull) 17.5 mm, thus falling within the range of measurements for this form as given by Benson (*Ibis* 103b, 1960: 73 and *Bull. Brit. Orn. Cl.*, 1971: 57). Although some forms of the genus are known to be migratory, I am not aware that this applies to any of *T. mutata*, of the Malagasy Region. It is thus most unlikely that Kirk's specimen was collected anywhere except Anjouan.

This led me to investigate an oft quoted Kirk record of the Madagascar Pratincole *Glareola ocularis* from the Zambezi. I could not find any record of *ocularis* published by Kirk himself, although (*Ibis*, 1864: 332) he records *G. nordmanni* from Lake Nyasa and the Zambezi. Most probably he was in reality referring to *G. pratincola*, which is well known in Malawi, whereas *nordmanni* has not been certainly recorded, and *ocularis* not at all (Benson, *Check list birds Nyasaland*, 1953: 31, 85). Mackworth-Praed & Grant (*Afr. handbook birds*, Ser. II, Vol. 1, 1962), White (*Revised check list Afr. non-passerine birds*, 1965) and McLachlan & Liversidge (*Roberts birds S. Afr.*, 1970) all accept the occurrence of *G. ocularis* on the Zambezi, although Clancey (*Durban Mus. Novit.* 7(10), 1965: 309) and Winterbottom (in *Check list birds S. Afr.*, 1969: 94) both express doubt.

The specimen on which the occurrence of *G. ocularis* on the Zambezi is based seems to have been first introduced into published literature by Sharpe (*Cat. birds Brit. Mus.* 24, 1896: 63). It is still in the British Museum (Natural History), and is merely labelled "Zambezi". It was in a collection of some fifty specimens bearing the initial registration number 63. 12. 8., shown in the register as received from Earl Russell and collected by Charles Livingstone. Its particular number is 63. 12. 8. 40. Some of these specimens were in fact collected by Kirk, and are labelled as from Mohila (Moheli) or Johanna (Anjouan) in the Comoros. There is no reason to doubt this, examples of the species concerned being *Leptosomus discolor*, *Coracopsis vasa* and *Hypsipetes madagascariensis*, which are unknown from anywhere in Africa. Others appear to be no less correctly labelled "Zambezi", examples being *Francolinus sephaena*, *Bias musicus* and *Erythrocercus livingstonei*, which are purely African. On the other hand there is a male in partial breeding dress of *Foudia eminentissima anjuanensis* (Milne-Edwards & Oustalet), registered number 63. 12. 8. 13, marked "Zambezi". All forms of *F. eminentissima* are probably sedentary, and it is most unlikely that this specimen was collected anywhere but Anjouan.

In view of these mislabelled specimens of *Terpsiphone mutata* and *Foudia eminentissima*, serious doubt arises as to the provenance of the specimen of *Glareola ocularis*. It could well have been collected in the Comoros, whence the species has been recorded by Benson (*Ibis* 103b, 1960: 45) and by Forbes-Watson (*Atoll Res. Bull.* 128, 1969: 14). Accordingly the occurrence of

G. ocularis on the Zambezi cannot be accepted on present evidence. The most southerly authentic African records I know of are from Mikindani, in extreme south-eastern Tanzania at 10° 15′ S., 40° 02′ E. They are based on three specimens in the Rijksmuseum van Natuurlijke Historie, Leiden, collected by T. Anderssen on 25th September 1965 (two) and 8th October 1967, and on beaches by small lakes, the first two by small lakes in a sisal plantation. I am grateful to Dr. G. F. Mees for very kindly allowing me to examine these specimens.

Moreau (*Bird faunas of Africa and its islands*, 1966), referring to *Galachrysia nuchalis*, but obviously really intending *G. ocularis*, records it as common on the coasts of Kenya, Tanzania and Somalia in August and September. He also mentions its occurrence on the Zambezi, but without questioning this. Granvik (*Journ. Ornith.* 71, 1923, suppl.: 33) records it in fact as far inland as the Kavirondo Gulf, on the north-east shore of Lake Victoria, in flocks of 50 to 100 in August. There appears to be still no breeding record. Presumably it does so only in Madagascar. In south-central Africa *G. pratincola* and *nuchalis* lay mainly in September (Benson, Brooke & Vernon, *Occ. Pap. Nat. Mus. S. Rhod.* 27B, 1964: 52), i.e. in the latter part of the dry season, when eggs and young would not be liable to destruction through flooding. Appert (*Orn. Beobacht.* 68, 1971: 67) gives no breeding record from south-western Madagascar, and only saw birds during the rains, in December/March.

A new parrot from the Sula Islands, Indonesia

by Joseph M. Forshaw

Received 17th August, 1971

During a recent examination of parrots in the Museum Zoologicum Bogoriense in Bogor, Indonesia, I found two specimens of *Prioniturus platurus* collected in the Sula Islands, hitherto an unrecorded locality for the species. These specimens, both adult males, differ from males of the two previously described subspecies—nominate *platurus* of Celebes and some neighbouring islands and *talautensis* of the Talaud Islands. For the Sula Islands population I propose the name:—

Prioniturus platurus sinerubris, subsp. nov.

Type: No. 21881, Museum Zoologicum Bogoriense; adult male; Wai Koka, Taliabu, Sula Islands; near sea level; 24th January 1955; collected by G. A. L. de Haan.

Measurements of type: Wing 159 mm; tail (excluding rackets) 84 mm; exposed culmen 21 mm; tarsus 17 mm.

Material: In addition to the holotype there is a paratype in the same collection, No. 21882.

Diagnosis: Males of this new subspecies are easily distinguished from males of both *platurus* and *talautensis* by the absence of red from the centre of the crown above the mauve-grey nuchal marking, and by their smaller size (see measurements below). The general colour of the back and wings is pale as in *talautensis*, but the wing-coverts are even more greenish than in that race. No females are available for comparison.

Distribution: At present this subspecies is known only from Taliabu in the Sula Islands, Indonesia. On the specimen labels de Haan has noted that the parrots were common on that island.

Comparative measurements in millimetres are as follows:—

	Wing	*Tail (excluding rackets)*	*Exp. cul.*	*Tarsus*
		P. p. sinerubris		
2♂♂	158–159 (158.5)	84–85 (84.5)	21	17–18 (17.5)
		P. p. platurus		
23♂♂	170–187 (180.0)	80–96 (87.8)	22–26 (23.3)	17–21 (19.0)
		P. p. talautensis		
12♂♂	177–191 (180.8)	80–90 (85.0)	22–24 (23.4)	18–21 (20.0)

Acknowledgements

I wish to thank Dr. S. Somadikarta, of the Museum Zoologicum Bogoriense, for assistance with the examination of specimens in that museum, and for forwarding the type specimens to me at New York where comparative examinations were made. For access to specimens in the American Museum of Natural History I thank Dr. D. Amadon, who also kindly commented on a draft of this note.

The visits to Bogor and New York were part of my overseas itinerary as a Churchill Fellow for 1971.

Nidification of some New Guinea birds

by C. B. Frith

Received 23rd August, 1971

Following recent studies and publications on New Guinea birds (Frith 1970, 1971 and Harrison & Frith 1970), the egg collection at the British Museum (Nat. Hist.) was examined for further new data from this area. The accounts which follow refer to material which appears not to have been described before. In each case identification was originally by the collector, which from comparison with other New Guinea material there is no reason to doubt. The names and order used are those of Rand & Gilliard (1967).

Pachycephalopsis poliosoma poliosoma, White-throated Thicket-flycatcher (Muscicapidae)

A single egg (Cl. no. 1901.7.4.10) of this species was collected by Weiske in south-east New Guinea, probably during his 1899–1900 expedition. It is buff-white in ground colour, regularly and quite densely covered with blotches of brown and light purplish-grey. There are more purplish-grey markings at the larger end, forming a darker cap. It measures 27.3 × 19.4 mm.

Pachycare flavogrisea subpallida, Golden-faced Pachycare (Pachycephalidae)

A clutch of two eggs (Cl. no. 1941.9.4.1019) was collected in the Rawlinson Mountains, New Guinea, but no date or collector's name is available. In ground colour they are pinkish, although this is almost completely obscured by the very dense markings. Fine blotches, spots and smears of russet, maroon and purple cover the eggs regularly all over. They measure 21.5 × 15.0 and 20.5 × 15.0 mm, and are glossy.

Pachycephala schlegelii obscurior, Schlegel's Whistler (Pachycephalidae)

This clutch of two eggs (Cl. no. 1901.7.4.7-8) was collected by Weiske in south-east New Guinea. No date is given but again they probably came from his 1899–1900 expedition. They are white, glossy, and marked very sparsely over most of the surface with small black and purple spots. However these markings are quite dense around the large end forming a small dark circle. They measure 28.0 × 20.0 and 26.9 × 20.6 mm.

Melidectes ochromelas batesi, Mid-mountain Melidectes (Meliphagidae)

A single egg (Cl. no. 1901.7.4.41) was collected at Aroa River, south-east New Guinea, with an unsexed parent bird (1901.7.4.78), in January 1900 by Weiske. It is a dark buff in colour, slightly glossy, with just a few very faint blotches of purplish around the larger end. Unfortunately it is quite badly damaged and measurements are approximate: 31.7 × 22.2 mm.

Ptiloprora guisei guisei, Red-backed Honeyeater (Meliphagidae)

A single egg (Cl. no. 1901.7.4.55) was collected in south-east New Guinea by Weiske, probably during 1900. It is white, glossy, and very sparsely spotted with fine markings of black, brown and purple which are a little larger and denser at the larger end. It measures 22.4 × 15.5 mm.

References:

Frith, C. B. 1970. The nest and nestling of the Short-tailed Paradigalla *Paradigalla brevicauda* (Paradisaeidae). *Bull. Brit. Orn. Cl.* 90: 122–124.

Frith, C. B. 1971. Some undescribed nests and eggs of New Guinea Birds. *Bull. Brit. Orn. Cl.* 91: 46–49.

Harrison, C. J. O. & Frith, C. B. 1970. Nest and eggs of some New Guinea Birds. *The Emu* 70: 173–178.

Rand, A. L. & Gilliard, E. T. 1967. *Handbook of New Guinea Birds*. London: Weidenfeld & Nicolson.

New distributional records of raptors in western Angola

by R. K. Brooke, I. C. Cannell & R. D. Jeffery

Received 16th October, 1971

In 1970 and 1971 all three of us independently visited parts of western Angola and made observations on birds. This paper sets out distributional records of raptors from places and areas from which they have not been reported by Traylor (1963) or Pinto (1966, 1970). R.K.B. visited parts of the Huila and Mocamedes Districts in August 1970, I.C.C. parts of both Districts as well as of Benguela District in September and October 1970 and R.D.J. parts of the Benguela District in July 1970 and 1971. The following localities are not always found on maps and we give their approximate positions and districts:-

Cavaco River, Benguela District, c. 12°34′S., 13°34′E;
Central Cubal River, Benguela District, c. 12°10′S, 13°05′E;
Coporolo River, Benguela District where the Catenque/Quilenges road crosses it;
Curoca River, Mocamedes District, reaches the sea near Porto Alexandre, c. 10°47′S., 11°52′E;
Cuula River Mouth, this river reaches the sea just south of the border between Benguela and Cuanza Sul Districts;
Equamina, coast of Benguela District, c. 13°05′S., 12°55′E;
Espinera, the main camp of Iona National Park in Mocamedes District, c. 16°45′S., 12°40′E;
Tundavala, Huila District, c. 14°50′S., 13°15′E.

Lophaetus occipitalis, Long Crested Eagle

Solitary birds were sitting on trees along the Central Cubal River and others were seen flying over the nearby sisal plantations (R.D.J.) According to Traylor (1963) this is the extreme southern limit of their distribution in

Angola but Pinto (1970) has two records from Huila District to the south-east.

Polemaetus bellicosus, Martial Eagle

A pair frequented a hole in the mudstone cliffs above the Cavaco River on 7 October: this species normally nests in trees but, nonetheless, they appeared to be nesting in the hole which was inaccessible. Two were seen at Equamina on 19 October (both I.C.C.). Not recorded from the Benguela District by Traylor (1963).

Hieraaetus spilogaster, African Hawk Eagle

A pair had a nest in a Baobab *Adansonia digitata* in a sisal plantation near the Central Cubal River containing a feathered nestling on 25 July (R.D.J.). Traylor (1963) knew of no breeding record from Angola.

Aquila verreauxii, Black Eagle

This species was not recorded from Angola by Traylor (1963) but was visually recorded by Pinto (1966) from Tundavala in the Serra da Chela and it has subsequently been collected there (Pinto 1970) where it is relatively common. In August 1970 Dr. da Rosa Pinto took R.K.B. to Tundavala where we saw three individuals in an hour or so. Several were seen there by I.C.C. in October 1970. But the Black Eagle is not restricted to the Serra da Chela. I.C.C. saw one on 21 October by the Coporolo River and later in the month solitary birds near the Curoca River and near Espinera in the desert foothills of the escarpment. On his 1967 tour of the same region I.C.C. did not observe the species at all (Cannell 1968). It appears that the Black Eagle is sparsely distributed throughout the escarpment region of southern and central Angola but is apparently uncommon except at Tundavala.

Haliaeetus vocifer, African Fish Eagle

A couple of adults were resident on the Central Cubal River in July 1971. R.D.J. was told that they are present there intermittently. Their behaviour did not suggest that they had a nest nearby despite the fact that this species is a midwinter breeder in southern Africa. Traylor (1963) knew of no records between Luanda and the Cunene River in the far south of Angola.

Neophron monachus, Hooded Vulture

A few were seen along the Central Cubal River, sometimes roosting in small parties with Vulturine Fish Eagles *Gypohierax angolensis* in Baobabs *Adansonia digitata* (R.D.J.). They may be distinguished from the similarly dark brown coloured immature stages of *G. angolensis* by their more slender bills, their downy, unfeathered heads and necks and their longer, thinner wings. *G. angolensis* was very common in the area and will be the subject of a separate paper. Traylor (1963) records *N. monachus* only from the Cunene drainage which comes within a hundred miles of our area. In the Cunene drainage it is reasonably common (Pinto 1970).

Neophron percnopterus, Egyptian Vulture

A pair were seen at the Cuula River Mouth (R.D.J.). They may be distinguished from the similarly pied adult *Gypohierax angolensis* which was common there by their lighter, less hooked bills, greater size, more slender build, white secondaries, thin, pointed wings, white back, and white, wedge-shaped tail. The only record of *N. percnopterus* known to Traylor (1963) was from Mocamedes in the south, but Pinto (1970) records two collected specimens from Vila Branca in the Huila District.

Circaetus cinereus, Brown Snake Eagle

A single bird frequented the tops of the sandstone cliffs at the Cuula

River Mouth. The habitat was far more open, consisting of grassland with a few scattered bushes and trees not exceeding 2 m in height, than the woodland and savanna of Traylor (1963).

References:
Cannell, I. C. 1968. Notes from Angola. *Ostrich* 39: 264–265.
Pinto, A. A. da R. 1966. Notas sobre as coleccoes ornithologicas recolhidas em Angola nas expedicoes efectuadas pelo Instituto de Investigacao Cientifica de Angola de 1959 a 1961. *Bol. Inst. Invest. Cient. Ang.* 3: 149–236.
— 1970. Um catalogo das aves do Distrito da Huila (Angola). *Mem. Trab. Inst. Invest. Cient. Ang.* 6.
Traylor, M. A. 1963. Check-list of Angolan birds. *Publ. Cult. Comp. Diam. Ang.* 61.

Slender-billed Gull *Larus genei* at Lake Manyara, Tanzania

by George E. Watson

Received 7th October, 1971

During a morning's leisurely birding on game safari at Lake Manyara National Park, Tanzania, 28 March 1971, I observed a Slender-billed Gull *Larus genei* standing on a narrow sandy beach directly beneath the lodge hotel on the escarpment. It was smaller than an adult Lesser Black-backed Gull *L. fuscus* and slightly larger than several Gull-billed Terns *Gelochelidon nilotica* that were standing nearby. The bird was a full adult with white head. Its dark red bill and dark eyes and legs were conspicuous. I also noted its "proud erect bearing", and that its head and neck appeared slim in comparison with those of its companions. When it flushed at about 20 yards, its distinctive wing pattern—black tips on primaries and white triangular on th leading edge confirmed my identification. I was not quick-witted enough to get a photograph, for I did not realize the full significance of the observation until I consulted field guide reference materials at lunch (Williams, 1963, *A field guide to the birds of East and Central Africa*, Collins, London). When I returned to the same spot in the afternoon I could not locate the bird.

There are no previous published records of Slender-billed Gulls for Tanzania or for that matter for anywhere in East Africa. The species migrates from its breeding grounds in the southern Soviet Union and Middle East south to Egypt and sporadically as far as the southern Red Sea and South Arabia (Erard, 1958, *Alauda* 26: 86–104). There is one inland record from Lake Basaaka, Ethiopia (Urban & Brown, 1971, *A checklist of the birds of Ethiopia*, Haile Selassie I Univ. Press, Addis Ababa). Slender-billed Gulls may be more frequent in winter in East Africa than previously suspected especially in view of the well known migration of Lesser Black-backed Gulls and Gull-billed Terns through the Red Sea to the Rift Valley Lakes and the association of the three species at Lake Manyara.

North American Knot and North American Ruddy Turnstone in Britain

by James M. Harrison & Jeffery G. Harrison

Received 27th September, 1971

The North American race of the Knot, *Calidris canutus rufus* (Wilson), has not yet been positively identified in Britain. This is distinguished from the typical race in being not only paler on the underparts in summer plumage, but in having a cinnamon wash nearest to Maerz & Paul (1950: plate 11.

7B), whereas the nominate form has richer chestnut underparts nearest to plate 12. 10B. There is a tendency for more white on the belly in *C. c. rufus* in which the upperparts are distinctly paler and greyer and the rufous markings are much reduced and paler.

According to Earle Godfrey (1966) this race nests in the southern part of the Canadian breeding range of the species from southern Victoria Island eastwards at least to Southampton Island in the north of Hudson Bay. The range therefore is well in the east of the Canadian Arctic which would suggest the possibility of an eastern Atlantic migration route. This is supported by a female specimen of the American Knot collected by J.G.H. on 11th July 1963 at Marrait, Nuqsuaq Peninsula, West Greenland.

On 21st July 1971, an adult female Knot, still in full summer plumage and which on preparation showed no moult, was collected on the Medway Estuary, Kent. On comparison this specimen matches the race *C. c. rufus* in every respect (see Plates 1 & 2).

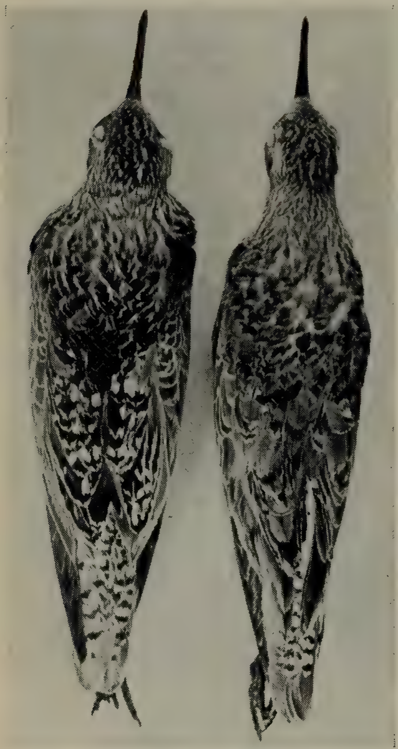

Plate 1. Left, *Calidris c. canutus* from Iceland, 31st July 1966. Right, *C. c. rufus* from Medway Estuary. Both females (upperside).

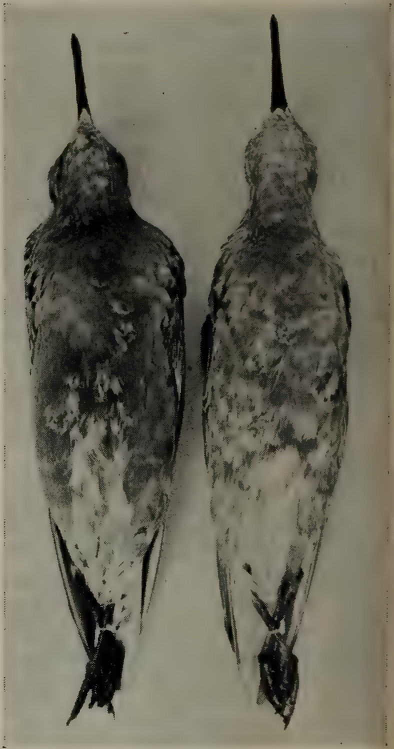

Plate 2. As Plate 1 (underside).

The occurrence of this form in Britain is to be expected in view of the fact that some of the wintering grounds for western North American Knots are in western Europe and probably in Africa. The fact that it has previously not been identified is doubtless because this race is only recognisable in summer plumage. In this respect it is analogous to Schiøler's Dunlin, *Calidris alpina* *arctica*, from north-east Greenland, which is now recognized as a regular passage migrant in Britain (Harrison & Harrison 1967; 1971).

There is now a good deal of ringing evidence supporting a migration route of Knots from North America into western Europe. A downy young ringed on Ellesmere Island, Canada (and therefore *C. c. canutus*) on 9th July 1955 was recovered on St. Kilda on 22nd August 1961 (B.T.O. records).

In S.W. Iceland, Hakon Vilhjalmsson has ringed a number of passage migrants, both in spring and autumn, with the following recoveries:—Greenland (2); England (9); Wales (1); Eire (3); Northern Ireland (1); Germany (1); Holland (2); France (3) and Portugal (1) (Dr. F. Gudmundsson, pers. comm.)

The ovary from this Medway Knot was sent to Dr. G. W. Storey, M.D., for histological examination. His report was as follows:—"Slide A shows the bursa fabricius and the portion of a mature oviduct. This was also present in Section B to some extent, while in Section C we have three levels each of which shows a normal well developed adult type ovary with large well formed maturing ova. There is however no obvious evidence of the discharge of eggs during the past season as far as I can see and there is no evidence of pigment in the stroma of the ovary which tends to make me believe that this is a sign of regression after breeding".

The conclusion from this report could be that this was a mature bird which had found unfavourable breeding conditions, which are well known in the Arctic, and had undertaken an early autumn migration.

On 30th June 1971, an example of the North American Ruddy Turnstone, *Arenaria interpres morinella* (Linnaeus), was obtained on the Medway Estuary in Kent. This is the breeding form of North America from north-eastern Alaska to western Baffin Island, wintering from the Gulf of Mexico southward on both coasts of South America.

This race is recognised by having richer, darker and more extensive chestnut on the upperparts, wing-coverts and inner secondaries in summer plumage. It is also slightly smaller. According to Salomonsen (1950) the wing length of adult males of *A. i. morinella* is usually under 150 mm, the average of 20 being 147.58 mm. In European *A. i. interpres* the wing length of adult males is usually 150 mm or more.

The Medway specimen was recognised by one of us (J.M.H.) in the field by exhibiting an exceptional amount of bright chestnut on the upperparts. The bird was collected and compared with a series of *A. i. morinella* from North America kindly loaned to us by Drs. Alexander Wetmore and Richard C. Banks of the Smithsonian Institute, and was found to match these perfectly.

When matched with Maerz & Paul (1950), the Kentish example of *A. i. morinella* shows a totally different colour range of brown when compared with an example of *A. i. interpres* collected in late May. These differences can be tabulated as follows:—

	Mantle	*Wing Coverts*
A. i. morinella (Kent)	Plate 6. 12B	Plate 6. 11B.
A. i. interpres (Sussex)	Plate 13. 12B	Plate 13. 5D.

The wing measurement of the Kentish *A. i. morinella* is 147 mm. It is illustrated comparatively in Plates 3 and 4.

There is supporting evidence for the presence of this race in Britain from a recovery of a bird ringed at Plymouth, Devon, on 13th January 1951, which was collected when breeding on Ellesmere Island, in the Candian High Arctic on 14th June 1955. There is also another record of one ringed on Ellesmere

Island which was recovered in winter in Portugal. These two recoveries (from B.T.O. records) and the present specimen suggest that there may also be a regular migration route of North American Turnstones into western Europe.

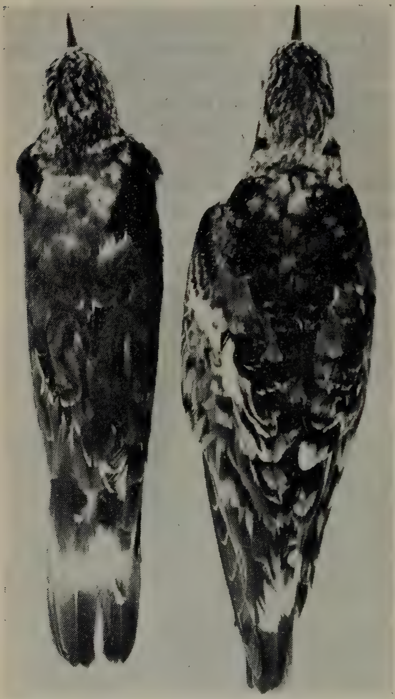

Plate 3. Left, *Arenaria i. morinella* from Medway Estuary. Right, *A. i. interpres*. Both males (upperside).

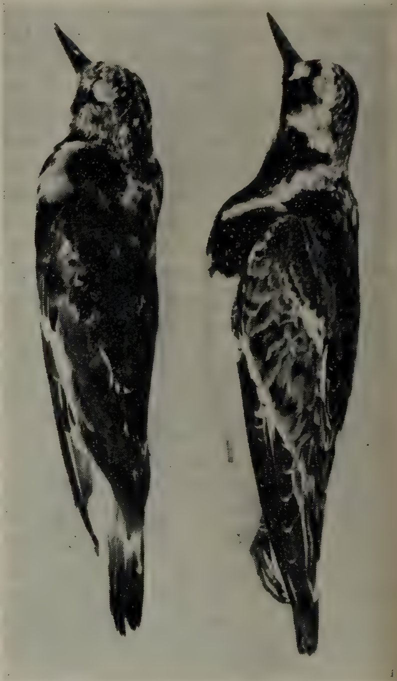

Plate 4. As Plate 3 (side view).

The spring and summer of 1971 were remarkable for the number of North American Arctic species recorded in the British Isles; see Gooders (1971: 30):—

> In Kent, a Wilson's Phalarope *Phalaropus tricolor* (Vieillot), was seen on 11th May, a Snow Goose *Anser caerulescens* (Linnaeus) on 18th May, and a Spotted Sandpiper *Actitis macularia* (Linnaeus) on 28th May. Elsewhere single Wilson's Phalaropes (possibly the same bird) were recorded from Teesmouth, Co. Durham, on 5th June; Minsmere, Suffolk, on 10th to 16th June, and subsequently on Hickling Broad, Norfolk.
>
> A Lesser Golden Plover *Pluvialis dominica* (Müller) was identified in County Kerry, Eire, on 28th May, a drake Blue-winged Teal *Anas discors* Linnaeus was present in Yorkshire from 31st May into July and finally, a drake Surf-Scoter *Melanitta perspicillata* (Linnaeus) was found near Aberdeen at the end of June.

Acknowledgements: These two specimens were collected under a research licence issued by the Nature Conservancy. We are most grateful for this facility and for the permission of Messrs. W. & H. Mouland on whose land the birds were collected.

We are indebted to the British Museum (Natural History), where we were able to see American Knots, and to Drs. Alexander Wetmore and Richard C. Banks of the Smithsonian Institute, Washington, D.C., U.S.A. for the loan of North American Ruddy Turnstones. For relevant ringing details, we are grateful to Dr. Finnur Gudmundsson, of the Museum of Natural History, Reykjavik, and Dr. J. J. M. Flegg of the British Trust for Ornithology. The photographs illustrating this note were kindly taken for us by Dr. Pamela Harrison.

Summary: This note describes the occurrence of the American Knot, and the North American Ruddy Turnstone in the British Isles. Ringing recoveries of the former strongly suggest a regular migration route for this species between North America and western Europe and the possibility of a similar movement by North American Ruddy Turnstones. Both specimens are now in the Harrison Zoological Museum collections.

References:

Godfrey, W. Earle. 1966. *The Birds of Canada.* Ottawa: H.M. Stationary Office.
Gooders, J., Ed. 1971. *World of birds.* I(I). London: Beaumont Press.
Harrison, J. M. & Harrison, J. G. 1967. The occurrence of Schioler's Dunlin in south-east England; a race new to the British Isles. *Bull. Brit. Orn. Cl.* 87: 142–148.
— 1971. Further notes on the north-eastern Greenland race of the Dunlin from Eire and Kent. *Bull. Brit. Orn. Cl.* 91: 41.
Maerz, A. & Paul, M. R. 1950. *A dictionary of color.* 2nd ed'n. New York: McGraw Hill.
Salomonsen, F. 1950. *The birds of Greenland.* Copenhagen: Munksgaard.

[The cost of reproduction of the plate in the above paper will be borne by the authors—Ed.]

The occurrence of a Great Black-headed Gull *Larus ichthyaetus* in Uganda

by D. J. Pearson

Received 6th August, 1971

Late on 16th April 1966 I noted a large grey backed gull on one of the runways at Entebbe airport. Its size (it was considerably larger than accompanying Lesser Black-backed Gulls *Larus fuscus*), its thick heavy bill and a dark smudge behind the eye indicated that it was a Great Black-headed Gull. The bird was watched next day by J. M. Lock and myself at ranges down to 40 yards, and the identification confirmed.

The mainly grey upperparts were much paler than those of nearby Grey-headed Gulls *Larus cirrocephalus*, and included some pale brown feathers; the underparts were white. The mark behind the eye was continuous with blackish feathering around the eye; a few dark streaks were also visible on the hind neck. The massive bill was pinkish brown with a broad, blackish subterminal band, which in all but the best views appeared as a dark tip. The tail was white, broadly tipped blackish, and fell far short of the tips of the closed wings.

In flight, the powerful head and neck, together with the short tail, produced a curiously front heavy appearance. The flight feathers were blackish brown and the wing coverts paler brown, the whitish tips to the secondaries and inner primaries and their corresponding coverts giving an impression of two pale parallel bars. Apart from the primary tips, the underwing appeared pale. The rump was pure white and the axillaries whitish.

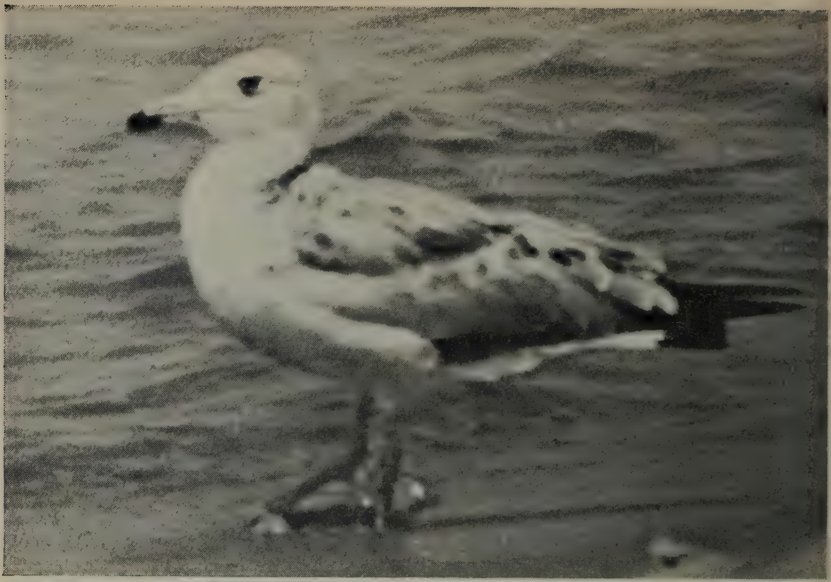

Plate. *Larus ichthyaetus* at Entebbe, Uganda

The bird was photographed at rest (see accompanying plate) and in flight. It was assumed to have been in its first summer. It was subsequently observed on a number of occasions up to 25th September 1966, either on the same runway or on a nearby sandy beach. This record, the first for East Africa, or indeed anywhere in inland Africa, seems remarkable for the fact that Entebbe is about 1,000 miles from the nearest regular wintering area on the coasts of the Red Sea. The species is stated by White (*A Revised Check List of African Non-Passerine Birds*, 1965) to occur south to Eritrea, but appears not to have been recorded from the coasts of Somalia or Kenya.

[Doubtless the subject of the above note was the same individual as that independently recorded on 1st May 1966 at Entebbe by Mann, *Bull. Brit. Orn. Cl.*, 1971: 112—Ed.]

[The cost of reproduction of the plate in the above paper is to be borne by the author—Ed.]

23 DEC 1971

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PREFACE

There has been no change in style in the present volume. Those who have been kind enough to advise on individual papers include Dr. W. R. P. Bourne, Sir Hugh Elliott, Mrs. B. P. Hall, Dr. J. G. Harrison, Dr. J. F. Monk, Capt. C. R. S. Pitman, the Rev. Dr. W. Serle and Messrs. K. D. Smith, R. Wagstaffe, C. M. N. White and K. Williamson. I am most grateful to Mr. K. E. Wiltsher, Manager of the Caxton and Holmesdale Press, assisted by Mr. P. G. Ball, for the regular production of the *Bulletin*. Once again Mrs. C. W. Benson has spent much time on proof-reading, and Mrs. M. Hawksley on the compilation of the Index to Scientific Names.

During November 1972 to January 1973 I was working in the field in Madagascar, and was unable to resume any editorial work until early March 1973. During these four months Dr. P. J. K. Burton most kindly performed all editorial duties on my behalf. At this point I wish to thank him for guiding the December 1972 number through the later stages of the press.

C. W. BENSON

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Holyoak, D. T., 21 York Place, Brighton BN1 4GU.
Morgan, P. J., B.SC., Department of Vertebrate Zoology, City of Liverpool Museums, William Brown Street, Liverpool 3 8EN.
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Death

The Committee regrets to record the death of the following member:—
Mr. R. E. Heath

26 JUN 1973

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Corrigenda

p. 34, line 6: '*ruficollis*', not '*rufrcollis*'
p. 46, line 11: '*salvagoraggii*', not '*salvago-raggii*'
p. 48, line 11: '*Apaloderma*', not '*Apoloderma*'
p. 58, line 8: '(Plate)', not 'plate'
p. 63, foot: 'C. E. Lister', not 'C. F. Lister'
p. 138, line 18: 'A. Prigogine', not 'A. Progogine'
p. 169, line 28: '1766', not '1788'

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The six hundred and seventy-fourth meeting of the Club was held at the Criterion in Piccadilly, London, S.W.1. on Tuesday, 18th January, 1972 at 7 p.m.

Chairman: Sir Hugh Elliott, Bt., O.B.E.; present: 16 members and 7 guests.

The speaker was Mr. I. J. Ferguson-Lees, who addressed the Club on the recent study conference at Tring on the co-ordination of amateur ornithology in Europe and illustrated his address with slides.

The birds of Ontong Java and Sikaiana, Solomon Islands

by T. P. Bayliss-Smith

Received 23rd November 1971

INTRODUCTION

Ornithological work in the Solomon Islands, southwest Pacific, began in the late 19th century, with the early collectors concentrating on the main islands of the group where a rich haul of endemic species and subspecies was found. This exploratory work was largely completed by the Whitney South Sea Expedition, which collected in most of the main Solomon Islands between 1921 and 1939 (Mayr 1945).

The birds of the outlying islands north and south of the main island chain were largely unknown until the 1930s, when the Whitney Expedition visited Rennell and Ontong Java. It was not until the Danish Rennell Expedition 1950–52 and the British Museum (Natural History) Expedition 1953 that the remarkable fauna of Rennell and Bellona, the two southern outliers, was more fully known (Wolff 1955). The five northern outliers are all atolls, and have received much less attention. Sikaiana had been visited very briefly by the Austrian "Novara" Expedition (Pelzeln 1865), whilst the Whitney Expedition collected most of the landbirds and some waders from Ontong Java in 1930 (Mayr 1945). The birds of the other three atolls, Nukumanu, Tauu, and Kilinailau, remain, to my knowledge, undescribed. The potential value of these isolated islands in Melanesia for the testing of general theories of island biogeography has recently been demonstrated by Greenslade (1968).

This paper gives the results of observations on the birds of Ontong Java during eleven months of residence, from 3rd June 1970 until 6th May 1971, and of observations on Sikaiana during two day-long visits on 1st June 1970 and 8th May 1971. Specimens of birds were not, with one exception, collected, but each of the sight-records that follow is the result of repeated, and often frequent, observations of the species. Identification in the field was greatly assisted by Mayr (1945), King (1967) and Child (1960), and the nomenclature used here for the land, sea and shore birds respectively follows these authors.

ONTONG JAVA ATOLL

Ontong Java is a large atoll situated between latitudes 5° 01′ and 5° 33′ S. and longitudes 159° 10′ and 159° 42′ E. The closest land apart from the small atoll of Nukumanu, 38 km to the north, is the island of Santa Isabel in the main Solomon chain, 240 km to the south. The atoll is kidney-shaped, with the lagoon having a maximum length of 70 km from northwest to southeast, and a width that ranges from 11 to 26 km. Around the lagoon are some 110 islands varying in size from a few metres across to the largest, Luangiua, which is 4.8 km long and 0.8 km wide. Within the lagoon are a further 14 small islands. The names used for these islands follow the unpublished 1 : 60,000 map "Ontong Java or Lord Howe Atoll" produced by the British Solomon Islands Protectorate Lands and Surveys Department (no date). The total land area of Ontong Java is approximately 956 ha, of which 56 ha is cultivated taro swamp (mainly *Cyrtosperma* sp.) and most of the rest coconut plantation. The former vegetation, probably mainly *Pisonia grandis* woodland, has very largely been replaced with coconuts by the human population, which has been present perhaps since after A.D. 1000 (Bayard 1966), and which numbered in 1970 860 people. Areas of shoreline vegetation, *Pemphis* scrub and mangrove swamp still remain, but in general the modification of the ecosystem by man must have been profound. Most of the breeding birds concentrate their nesting sites in trees or in areas of woodland which have been permitted, by neglect or design, to grow within the coconut plantations, and seabirds in particular favour those islands least planted with coconuts. The human population also affects bird populations directly by collecting, for consumption, birds and eggs of all species larger than the White Tern *Gygis alba*, but this is probably a limiting factor only for the boobies and ground-nesting terns. The only group perhaps unaffected by human activity are the waders.

BIRDS OF ONTONG JAVA

The first sight-records of birds were made by Ernst Sarfert of the German Sudsee-Expedition, who was at Luangiua in August 1910. Sarfert described and listed the vernacular names of 11 species (Sarfert & Damm 1929), and from these descriptions all can be easily identified. The Whitney South Sea Expedition visited the atoll in early October 1930, and collected specimens of 14 species, adding one new land bird and six new waders to Sarfert's list (Bogert 1937, Stickney 1943, Mayr 1945 and 1949). A visit by Mrs. D. Bradley in late September 1953 added three new records (Bradley 1957), whilst my own observations in 1970–71 add a further 12 birds to the list, which now totals 32 recorded species. Of these, 12 are seabirds, at least nine of which breed on the atoll, 12 are shorebirds which migrate to the Northern Hemisphere to breed, and 12 are land birds, nine of which breed on the atoll. These data are summarised in the Table, which gives also the birds' vernacular names. Birds are a not insignificant element in the environment of the Ontong Java people, and their knowledge of them is considerable; only the rarest and most inconspicuous of the shorebirds lack individual names.

Puffinus pacificus: Several Wedge-tailed Shearwaters were seen in early May on the ocean just east of the atoll, but this bird was never seen inside the lagoon or on land. It is well known to Ontong Java fishermen, who have the belief that it both sleeps and nests underwater.

Phaethon lepturus: White-tailed Tropicbirds come to Ontong Java to breed, and were seen on islands which have sufficient large trees for nesting sites. In late August a bird was watched nest-making, and by September up to 40 birds could be counted at once flying in circles at some height over the centre of Luangiua. Eggs were not found until early January. The nest is usually in a deep fork or hole of a tree, and since the incubating bird refuses to leave the nest when disturbed, it is caught easily by the people more frequently than its numbers might suggest. Nests were also found in February at Keila and Lopaha. Between April and July *Phaethon* was much less frequently seen.

TABLE

Ontong Java and Sikaiana birds – previous records and vernacular names.

	Ontong Java		*Sikaiana*	
Species	*Records*	*Name*	*Records*	*Name*
1. *Puffinus pacificus*	6	hilikai	6	—
2. *Phaethon lepturus*	3, 6	kava'e	4, 6	tavae
3. *Sula leucogaster*	6	ke ako'a	—	te muakena
4. *Sula sula*	6	ke angapu	—	teatoko
5. *Fregata minor*	1, 6	ke akaha ke oamea	6	te kataha
6. *Fregata ariel*	6	ke akaha ke hoho'ake	—	—
7. *Sterna fuscata*	6	kalahola	—	te talamona
8. *Sterna sumatrana*	6	ke lapiki	4	tapiti
9. *Thalasseus bergii*	1, 6	ke kala	—	te tala
10. *Gygis alba*	3, 6	ke popi'i	5, 6	te kinakina
11. *Anous stolidus*	1, 3, 6	ke ngo	5, 6	te nono
12. *Anous tenuirostris*	1, 6	ke leia	—	te lekia
13. *Pluvialis dominica*	1, 2, 6	ke ivi	6	te vivitai
14. *Charadrius mongolus*	2, 6	—	4	—
15. *Charadrius leschenaultii*	6	—	—	—
16. *Numenius phaeopus*	2, 3, 6	kangalo'a	6	toloa
17. *Limosa lapponica*	2, 6	kaloakule	6	toloa
18. *Tringa nebularia*	6	—	—	—
19. *Tringa hypoleucos*	3, 6	kilikavoi	—	—
20. *Heteroscelus incanus*	6	ke 'apo	—	—
21. *Heteroscelus brevipes*	2, 6	ke 'apo	6	te kiviaitu
22. *Arenaria interpres*	2, 6	ke apa'o	4, 6	te kivitalei
23. *Erolia ruficollis*	6	—	—	—
24. *Calidris acuminata*	2, 6	—	—	—
25. *Demigretta sacra*	2, 6	ke hele	6	te motuku
26. *Megapodius freycinet*	1, 2, 6	ke malau	6	te matika
27. *Ducula pacifica*	1, 2, 3, 6	ke lupe	4, 6	te lupe
28. *Caloenas nicobarica*	1, 2, 6	ke leia	6	te lekia
29. *Eudynamis taitensis*	1, 2, 6	ke aleva	—	kaleva
30. *Halcyon chloris*	6	kilihonga	6	te kiokio
31. *Monarcha cinerascens*	1, 2, 6	ke sisi'i	5, 6	te kiokio
32. *Aplonis feadensis*	1, 2, 3, 6	ke huia	—	—

Records:
1. Sarfert and Damm (1929).
2. Whitney South Sea Expedition, 1930: Amadon, Bogert, Stickney, Mayr (1938–55).
3. Bradley (1957).
4. Pelzeln (1865).
5. Mayr (1955)—*Monarcha;* Lever (1943)—others.
6. This paper.

Sula leucogaster: The boobies' relative tameness and their easily-found nests make them very susceptible to human interference. This is recognised by the people who in recent years have agreed to some voluntary conservation measures. *Sula leucogaster,* the Brown Booby, was seen occasionally flying over the ocean or lagoon. A few were breeding on Nguikua in the Red-footed Booby colony, and it is also said to nest on Henguakai.

Sula sula: The Red-footed Booby is both more widely distributed and more numerous than the Brown Booby, but it is seen much less frequently away from its nesting colonies. It is confined for breeding to six of the less disturbed islands, mainly in the northwest of the atoll. At Nguikua in January 35 nests were counted in *Pisonia* trees, with birds in all stages of development. There was a similar sized colony spread over the islands of Kekumounga, Peikingi and Hanguailua. The colony on Henguakai was not visited, but is said to be the largest. Both species of Booby are sometimes kept as pets.

Fregata minor: Great Frigatebirds were seen throughout the year, often in association with Lesser Frigatebirds. They nest in amongst or close to the booby colonies, in particular on the islands of Kekumounga and Henguakai, but range very widely over the atoll. In January about 50 mixed frigatebirds were counted flying away from trees on the tiny lagoon island of Kemangumangu, where they were apparently roosting. A pair of Great Frigatebirds was once observed circling the large freshwater pond in the centre of Luangiua taro swamp and swooping down to scoop up water, each bird repeating this three or four times.

Fregata ariel: The Lesser Frigatebird was seen less often, but was found nesting on the same islands. The young of both species are sometimes kept as pets. A decline in their numbers can perhaps be inferred from the fact that the two islands named after the Frigatebird, Akaha and Henguakaha, today no longer possess breeding populations.

Sterna fuscata: All informants unhesitatingly identified from photographs the Sooty Tern as a breeding species of the atoll, but it was not until 28th December that a possible sighting, and 3rd January that a definite sighting, was made. Both of these were of single birds on the shores of small and very isolated islands. On 4th January three pairs were seen, together with a larger number of *Sterna sumatrana* which were beginning to nest on the small grassy sand cay Keumalali, and a similar number were seen on the sandy part of Seleiva'a. In both these cases the islands are small and remote. No eggs were found on this occasion, and no subsequent visits could be made, but this evidence and the assertions of reliable informants make it very probable that *Sterna fuscata* does breed on Ontong Java during the first two months of the year. It was not seen during the rest of the year.

Sterna sumatrana: Black-naped Terns were seen in all months feeding in the lagoon or resting in small groups on sand spits. Several immature birds were noticed in December. Nesting activity began in that month, and eggs were found throughout January to March on the grass or on the sand beaches of small islands, particularly those within the lagoon. Small colonies were also found nesting on top of the offshore shingle ridges thrown up by the 1967 cyclone. At the end of March a fully-fledged young was found. *Sterna sumatrana* suffers quite heavily from human interference, and it seems doubtful whether the atoll's population can be self-supporting.

Thalasseus bergii: Crested Terns could be watched quite often fishing in the shallow waters of the lagoon near Luangiua, and in other parts of the atoll.

No eggs were found, but informants stated that it nests in large numbers on some small and isolated sand cays.

Gygis alba: White Terns are probably the commonest seabird after the Black Noddy terns. They were seen in all months on practically every island that was visited, and nested throughout the year with a climax in December to February.

Anous stolidus: Brown Noddy terns were seen throughout the year, but the population increased very noticeably during July when the birds began to take up nesting sites on land. Unlike many birds, *Anous stolidus* readily accepts the crown of a coconut palm as a nesting place. As this species is also much less colonial in its nesting behaviour than *A. tenuirostris*, its nests are distributed much more evenly over an island than those of the latter species, which tends to cluster thickly only in areas of bushes and trees. *A. stolidus* were found nesting close to the ground only on those islands where all the trees had been destroyed by the cyclone. The first eggs were laid in early October and nesting continued until the end of February. By late March flocks of immature birds could be seen in the lagoon, and the islands were becoming deserted.

Anous tenuirostris: The Black Noddy is the commonest of all the atoll birds. In a count of eggs collected at Alunga on 7th December, this species outnumbered White Terns and Brown Noddies in the ratio 7: 2: 1 respectively. It must have been superabundant in prehuman times, making an important contribution to the nutrient cycle of the island ecosystem, and even today is abundant on all islands where big trees remain, especially *Pisonia* and *Hernandia sonora*. It is, however, found nesting in bushes as low as two metres on those islands where human interference is small. The first eggs appeared in late September, and actively reached a climax in December. By late February most young are fledged, and the colonies are deserted about a month before *A. stolidus* has finished nesting. Eggs, adults and young of both noddy terns are taken for eating, but this probably has only a local effect on the very large populations.

Pluvialis dominica: Individual Golden Plovers were observed in all months, the first record being a single bird on 22nd June. In late July two birds were seen together, but not until 5th September were several birds observed at one time, feeding at low tide on exposed *Thalassia* and mud flats. After this date *Pluvialis* was very often seen, usually preferring lagoon to ocean shores, and almost always feeding alone. In early March they were still numerous, but on 21st March only one bird, in breeding plumage, was still to be seen along 5 km of reefflat and shoreline at Pelau. After 5th April *Pluvialis* was never seen on the shore, but individuals were observed skulking in the undergrowth of the Pelau coconut plantations, and behaving very differently from the birds of previous months which were very seldom seen on land.

Charadrius mongolus: Neither of the two *Charadrius* was common, but *C. mongolus* was more frequently recorded and a few birds were present in June and July. The distinctive chestnut collar and cap of the breeding plumage was present or partially present in birds seen in the first week of September and at the end of March. *C. mongolus* was usually solitary, but would flock together when alarmed. It was normally seen resting on slabs of beachrock at high tide, or at low tide feeding on the exposed ocean reefflat.

Charadrius leschenaultii: The paler colouring and larger size of the Large Sand Dotterel was only sufficiently distinctive for a definite identification when it could be compared side by side with the Mongolian Dotterel.

Single birds were identified in this way on 5th and 6th September, and in November, with other possible sightings made in subsequent months. Neither species of *Charadrius* was ever seen on land.

Numenius phaeopus: Whimbrel were recorded all through the year, with a big increase in the small June–August population being noticeable on September 4th, 12th and, probably, subsequently. These newly-arrived migrants could be distinguished initially by their behaviour, being less cautious, flying in pairs or groups instead of singly, and making different calls. Birds were often seen in the open grassy land near Luangiua village during September, and two dead birds were found in this area at the end of the month, but in later months Whimbrel were not seen on land except during high tides, when they sometimes moved into the mangrove swamps and taro gardens to perch. During the last week of March the majority left the atoll, though on 5th May there were still a few individuals at Luangiua. *Numenius* was the commonest wader after *Heteroscelus* and *Arenaria*, and was usually the most solitary, cautious and noisy of the shorebirds.

Limosa lapponica: The Bar-tailed Godwit was not a common wader, but some birds were present throughout the year. Three were seen together at Luangiua on 24th June, and some or all of probably this same trio were recorded quite often in the three subsequent months. On 27th September six were seen together, and on 8th October nine. Though not especially cautious, *Limosa* was never seen on land, and was usually seen feeding alone or in twos and threes on exposed *Thalassia* beds or sandy reefflats. Most had departed by 5th April, although one was seen on 24th April.

Tringa nebularia: The Greenshank has not previously been recorded in the South Pacific east of New Guinea. A single bird was probably seen on 25th August, and was seen again and positively identified on 5th September, when it was feeding with a group of *Heteroscelus* at Luangiua. Possibly the same bird was seen on the lagoon beach twice more in September, and again on 13th December on the sandy reefflat at Angii. On 21st January two birds were seen together at Luangiua, but it was not recorded subsequently. None were seen on other islands in later months, so that if *Tringa nebularia* does winter regularly in Ontong Java, then it reaches the atoll only in extremely small numbers.

Tringa hypoleucos: The Common Sandpiper was not identified until 25th October, and was only seen infrequently at Luangiua where the rather open lagoon shore may not have been attractive to this species. At Keila, however, in February, there were 6–8 birds in residence along 3½ km of lagoon shore, with single birds usually to be found on the sand beach beneath overhanging woodland trees. At this time it was invariably solitary, but on 21st March a flock of seven was seen feeding along the tideline at Pelau. This group increased in size to nine on 2nd April and eleven on 4th April, and disappeared soon after this date. On 24th April only four birds remained at Pelau, and none at all were seen at Luangiua in early May.

Heteroscelus incanus: The American species of *Heteroscelus*, the Wandering Tattler, could quite easily be distinguished from the Asiatic species by its larger size, darker colour, barred underparts, and falling cry, although unless very alarmed it would usually fly off silently. American Tattlers were never seen on the lagoon side of islands nor in the inland swamps, preferring at high tide to sit on beachrock outcrops on the ocean beaches. It was outnumbered approximately 15 : 1 by the Asiatic species, being about as common as *Limosa* in total population size.

Heteroscelus brevipes: Asiatic (Grey) Tattlers were present throughout the year, with a big increment noticed after 25th August. This wader preferred in general the ocean side of islands, but could be seen wherever reefflats, especially *Thalassia*, were exposed at low tide. When feeding it was solitary, but it would congregate to some extent when resting at high tide, usually on slabs of beachrock, but quite often too in the open areas of the Luangiua and Pelau taro swamps, and in mangrove swamps elsewhere. Together with *Arenaria interpres*, *H. brevipes* was easily the commonest wader, outnumbering other species by four or five to one in counts made near Luangiua. By March they were developing breeding plumage and were flying in pairs, and at the beginning of April birds were displaying and moving together in flocks. By 24th April only individuals remained, but even in May *H. brevipes* was still quite a common bird at Luangiua.

Arenaria interpres: Turnstones were equally as common as Asiatic Tattlers. They were always the least shy and the most sociable of the waders, feeding, flying and resting in small flocks of less than 15 birds, though sometimes much bigger flocks would form. *Arenaria* usually preferred lagoon beaches or the few sand beaches on ocean shores, and was only seldom encountered on land. Many birds arrived after 12th September, and they appeared to leave the atoll rather later than the other waders, being still present in large flocks on 24th April. By 5th May only individuals remained.

Erolia ruficollis: The Red-necked Stint was the smallest wader seen, and was present in very small numbers, no more than two birds being seen at any one time. It was identified at Luangiua on 2nd August and again during the two following months, and at Pelau on 27th April. It was always in company with other small waders, but was shyer than most of them.

Erolia acuminata: A single Sharp-tailed Sandpiper was identified on 16th July, but was not seen in numbers until late November, when a flock of 10 was seen feeding on the ocean-side reefflat. This group flew inland as soon as the rising tide reached the shingle beach. Individual birds were not infrequently seen in the *Colocasia* and *Cyrtosperma* gardens both at Luangiua and at Pelau, but unlike other waders which would fly away or attempt to perch after being alarmed, *Erolia acuminata* would usually remain on the ground hidden by plants. Moreover it was not seen except on these two islands with extensive taro swamps, and was only found in the intertidal zone occasionally at low tide. From this it seems probable that *Erolia acuminata* spends much of its time on land, living in a freshwater habitat.

Demigretta sacra: The Reef Heron, described as *D. s. sacra* Gmelin by Mayr & Amadon (1941), was recorded on the shores of almost all the islands that were visited, and was seen in all the three colour phases, white, grey and mottled, in roughly the ratio 2: 2: 1. Although this bird spends most of its time feeding on the reefs, it was seen on two occasions to be eating *Rattus exulans*.

Megapodius freycinet: The Megapode, described as *M.f. eremita* Hartlaub by Mayr (1938), is common on almost all islands, being present even on a small and relatively stony lagoon island such as Hakuola, where an egg was found in January. In the evenings *Megapodius* would venture out onto the Luangiua beaches to feed along the tideline, but it was usually seen only in the undergrowth of the coconut plantations.

Ducula pacifica: The Pacific Pigeon, described as *D. p. pacifica* Gmelin by Mayr (1945), was recorded on most islands which had big woodland trees, but it was a cautious and silent bird most often seen flying to roost in the evenings. It is probably somewhat more abundant than *Caloenas* which appeared to be less widely distributed.

Caloenas nicobarica: The Nicobar Pigeon was recorded only on Luangiua, Kepae, Keila and Pelau, all of which are large islands with substantial numbers of woodland trees. It is occasionally shot, and is also snared with fish hooks when feeding on fallen fruit.

Eudynamis taitensis: Individual Long-tailed Cuckoos were seen at Akaha in July and at Luangiua up until 28th August. No more were then seen until 27th January when three birds were seen and heard in a thickly overgrown part of Luangiua. Apart from these presumed recently-returned non-breeding migrants, *Eudynamis* was usually silent, solitary and very infrequently seen, seldom venturing from the canopy level.

Halcyon chloris: White-collared Kingfishers have been recorded from most of the Solomon Islands including Rennell, but never before from the northern outlying atolls. In Ontong Java it was recorded from Luangiua and the nearby islands of Auku and Ngikolo, and also from Pelau, but not from any of the large and apparently suitable islands in between, such as Keila, so it seems possible that there is little communication between the northern and southern populations. On Ngikolo and Auku *Halcyon* was found in mangrove swamps (*Rhizophora mucronata*), but at Luangiua and Pelau they were usually, but not invariably, seen in the central taro swamps. Two nests were found at Luangiua, the first in late August in the *Cyrtosperma* gardens, and the second in early January inside the village area. Both nests were in holes in coconut palms, the first three metres high in an old termite nest attached to the trunk, and the second six metres high in the rotten trunk of a dead palm. One of the three fledglings in the first nest was taken as a specimen. Skinks (*Emoia* sp.) were one of the main foods brought to the nest.

In appearance the Ontong Java *Halcyon chloris* would seem to correspond most closely with *H. c. alberti* Rothschild & Hartert (Mayr 1931, 1936, 1945), but in view of certain differences together with the great tendency of this species towards subspeciation, it may prove to be a separate subspecies. Adult birds are an estimated 165–180 mm in length, with a bright ultramarine blue rump and tail and rather duller, darker blue wing-coverts and back. The paler, brighter blue extends to the primary feathers of the wings. The nape and also the chin and throat are pure white. The breast and belly are pale buff, with the flanks and under tail-coverts of the male bird orange, the colour being usually visible only in flight. Above the white collar a narrow ring of black extends from the black upper mandible through the black eyes and round to the nape. The lower mandible is brown, the lores are a pale orange buff colour, and the cap and forehead are dark blue.

An immature specimen (University Museum of Zoology, Cambridge, England, 24/Alc/8/g/24) was taken 2–3 days before it would have left the nest; it measures as follows: wing 72 mm, tarsus 11 mm, bill (nostril to tip) 23 mm, tail 34 mm, total length about 135 mm. The colour of plumage, which in nomenclature follows Ridgway (1886), is as follows: the chin is pure white, the breast and throat are white with fine brown barring, and the belly and lower flanks are dirty white. The upper flanks, thighs and underside of the wings are orange-buff, as are the lores and back of the collar. The crown is a dull sea-green, merging with the black and orange-buff barred feathers of the forehead. The back is black tinged with bottle-green, the feathers of the upper wing coverts are sea-green barred with orange-buff, and the primary, secondary and tail feathers are a purer sea-green and black.

The rump alone shows the brighter cerulean-blue colour which is the most noticeable feature of the adult birds.

In the field *Halcyon chloris* was most often seen in flight, which is rapid and direct and often between tree tops or coconut crowns, the most common perches. From there they could often be heard calling, the cry being a brief rising note whistled 4–5 times in quick succession, after which there is a pause of 3–5 seconds before it is repeated. The birds are shy except when attacking intruders at the nest.

Monarcha cinerascens: The Islet Monarch, described by Mayr (1955) as *M. c. impediens* Hartert, is almost certainly the commonest land bird, being found even on small islands where there is very little vegetation besides coconuts. The nest is a small grassy cup 2–4 metres above the ground in a small sapling or bush. One found in January contained two nearly mature brown-feathered fledglings.

Aplonis feadensis: Described by Mayr (1945) as *A. f. feadensis* Ramsay, which is found only on Nissan, Nukuria and Ontong Java, the Atoll Starling was recorded on all the larger islands of the atoll. Small flocks would congregate in the open ground near Luangiua village, where it appeared to be particularly common, but elsewhere individuals or pairs only were seen. It appeared to be more common in the southern part of the atoll, and this may be related to the abundance of nesting sites in this area, in the innumerable trees and coconut palms destroyed by the 1967 cyclone. Young were being fed at the nest at the end of July, and a nest found on 13th October contained two well-developed eggs, which measured 28 × 19 mm and were pale blue with dark reddish-brown spots concentrated at the rounded end. Both nests were in holes in dead trees, about 10 and 5 metres above the ground respectively.

The above list represents all the sight-records made during 1970–71. The only other definite sighting was of a small swallow, seen at Pelau on 15th April, after two days of very strong northwest to southwesterly winds. This bird was dark brown or blue above and white below, with a reddish throat and moderately forked tail. It was planing at tree-canopy height catching insects, and may have been a vagrant of *Hirundo tahitica* or *H. nigricans*.

No bird resembling *Porphyrio porphyrio*, cited by Mayr (1945) as a possible Ontong Java resident, was seen during 1970–71.

SIKAIANA ATOLL AND BIRDS

Sikaiana atoll is situated in latitude 8° 25′ S. and longitude 162° 50′ E. It consists of four islands of which Sikaiana itself is the largest and the only one inhabited, with a population in 1970 of 190. The atoll measures almost 10 km from west to east, and has a maximum north–south width of 5½ km. The total land area is about 130 ha, and the nearest land is Malaita, 184 km to the west. Both vegetation and land use are comparable to Ontong Java.

Apart from a small collection by the "Novara" Expedition in 1858 (Pelzeln 1865), two records by Lever (1943), and a Hamburg Museum specimen described by Mayr (1955), the birds of Sikaiana have not been studied. On the two visits that were made, birdwatching was restricted to the main island, but on the second visit some of the older residents were questioned with the assistance of two Ontong Java men, and the names and descriptions of all birds known to them were obtained. Of the seabirds listed in the Table, the following were said to breed: *Phaethon lepturus, Sula leucogaster, S. sula* (both on Matuiloto Island only), *Gygis alba*, *Anous stolidus*, and *Anous tenuirostris*. There are seven land birds (*Aplonis* being absent), all of which breed except *Eudynamis*. Sight-records were not obtained for those species not indicated as such in the Table, but nevertheless the descriptions and vernacular names given to them by Sikaiana informants make their presence on the atoll more than probable.

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References:

Amadon, D. 1943. Birds collected during the Whitney South Sea Expedition 52. Notes on some non-passerine genera 3. *Amer. Mus. Novit.* 1237.

Bayard, D. T. 1966. *The cultural relationships of the Polynesian Outliers.* Unpub. M.A. thesis, Univ. Hawaii.

Bogert, C. 1937. Birds collected during the Whitney South Sea Expedition 34. The distribution and migration of the Long-tailed Cuckoo (*Urodynamis taitensis* Sparrman). *Amer. Mus. Novit.* 933.

Bradley, D. 1957. Birds of the Solomon Islands. *Ibis* 99 :352-353.

Child, P. 1960. Birds of the Gilbert and Ellice Islands Colony. *Atoll Res. Bull.* 74.

Greenslade, P. J. M. 1967. Island patterns in the Solomon Islands bird fauna. *Evolution* 22: 751–761.

King, W. B. 1967. *Seabirds of the Tropical Pacific Ocean.* Washington D.C.: Smithsonian Inst.

Lever, R. J. A. W. 1943. Further notes on the fauna of the British Solomon Islands. *Trop. Agriculture* 20 (2): 40–43.

Mayr, E. 1931. Birds collected during the Whitney South Sea Expedition 17. Birds of Malaita Island (British Solomon Islands). *Amer. Mus. Novit.* 504.

Mayr, E. 1936. Birds collected during the Whitney South Sea Expedition 31. Description of 25 species and subspecies. *Amer. Mus. Novit.* 828.

Mayr, E. 1938. Birds collected during the Whitney South Sea Expedition 39. Notes on New Guinea birds 4. *Amer. Mus. Novit.* 1006.

Mayr, E. 1945. *Birds of the Southwest Pacific.* New York: Macmillan.

Mayr, E. 1949. Birds collected during the Whitney South Sea Expedition 55. Notes on the birds of northern Melanesia 2. *Amer. Mus. Novit.* 1417.

Mayr, E. 1955. Birds collected during the Whitney South Sea Expedition 63. Notes on the birds of northern Melanesia 3. *Amer. Mus. Novit.* 1707.

Mayr, E. & Amadon, D. 1941. Birds collected during the Whitney South Sea Expedition 46. Geographical variation in *Demigretta sacra* Gmelin. *Amer. Mus. Novit.* 1144.

Pelzeln, A. von. 1865. *Reise der Osterreichischen Fregatte "Novara" um die erder in den jahren 1857, 1858, 1859. Zoologische Theil. Band 1: Vogel.* Vienna: Karl Geroldssohn.

Ridgway, R. 1886. *A nomenclature of colours for naturalists.* Boston: Little, Brown.

Sarfert, E. & Damm, H. 1929. *Luangiua und Nukumanu.* In- Thilenius, G. (Ed.) *Ergebnisse der Sudsee-Expedition 1908–10, 2. Ethn., B. Micronesie,* Band 12 (1). Hamburg: Friederichsen, de Gruyter.

Stickney, E. H. 1943. Birds collected during the Whitney South Sea Expedition 53. *Amer. Mus. Novit.* 1248.

Wolff, T. 1955. *The natural history of Rennell Island,* 1 (1). Copenhagen: Danish Science Press.

Some lowland forest birds in southern Tanzania

by R. Stjernstedt

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In *Bull. Brit. Orn. Cl.*, 1970: 28–31 I recorded some evergreen forest birds which I had found frequenting *Brachystegia microphyllum* woodland at Liwale, southern Tanzania, at 2,200 feet a.s.l. This habitat seemed to have a montane element in that one of the birds recorded was *Bessonornis anomala*, recently re-affirmed to be a montane species by Hall & Moreau (1970: 122).

I must withdraw this species from the list, since I believe that I mistook *Cossypha natalensis* for it (*C. natalensis* is indeed a lowland bird, *fide* Hall & Moreau, 1970: 126). I have since become familiar with both these species, and have also been able to compare tape-recordings of their songs with that of the Liwale bird. The Liwale recording sounds identical with the song of *C. natalensis*, and quite unlike samples of the song of *B. anomala* from several localities in northern Malawi, south-western Tanzania and the Uluguru Mts. to the northward. Furthermore, the imitative component noted at Liwale, reminiscent of a Red-chested Cuckoo *Cuculus solitarius*, seems typical of *C. natalensis*. Thus Oatley (*Ostrich* suppl. 3, 1959: 428) states that in South Africa cuckoos are regularly imitated, and Benson (*Ostrich* 17, 1946: 163) specifically mentions imitation of the Red-chested Cuckoo in Malawi.

The Liwale *Brachystegia microphyllum* remains nevertheless an interesting and unusual habitat, dissimilar from the more usual type of lowland forest, but in no sense montane. Its avifauna is comparable to that of coastal forests such as on the Pugu Hills near Dar es Salaam, and further investigation would probably reveal more similarities also with the nearest patch of true forest on the Rondo Plateau, 100 miles to the south-east. The coastal forests owe their existence to increased precipitation on small hills close to the sea. Liwale is further inland and much drier, but provides the same sort of habitat for birds, although botanically quite different.

On Rondo, which I visited briefly on one or two occasions, the most interesting bird I found was *Neocossyphus rufus*, typical of coastal forests further north, and which I was not aware had previously been recorded south of Zanzibar. C. W. Benson has since drawn my attention to the existence in the Rijksmuseum van Natuurlijke Historie at Leiden of a specimen of *N. rufus* collected by T. Anderssen on 17 September 1965 at Mikindani, an area of mainly dry coastal "jungle", at 10° 15′ S., 40° 02′ E. I am grateful to Dr. G. F. Mees, Curator of Birds at Leiden, for permission to mention this record.

Reference:
Hall, B. P. & Moreau, R. E. 1970. *An Atlas of speciation in African passerine birds*. London: British Museum (Nat. Hist.).

Clinal size variation in the Palm-nut Vulture *Gypohierax angolensis*

by B. G. Donnelly & Michael P. Stuart Irwin

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Apart from measurements provided in regional works, and difficult to analyse for lack of detail, very little has been published on clinal size variation in the larger African raptors, although it may be expected to exist. This has been principally due to the inherent difficulty of assembling or having access to adequate series of birds of large size covering a wide geographical area, even though such would be available from the larger collections. However, Benson & Irwin (1968: 44–45) were able to show that in the Bat Hawk *Macheirhamphus alcinus* birds from equatorial localities in the Congo Basin showed a tendency towards small size when compared with those from eastern and southern Africa. Irwin & Benson (1966: 3–4) and Benson, Brooke, Dowsett & Irwin (1970: 8–9) also discuss, in some detail, more irregular size variation in the Lizard Buzzard *Kaupifalco monogrammicus* throughout Africa. In the present note we have been able to demonstrate a marked cline in *Gypohierax angolensis* with a west-east increase in size.

On a short visit to Europe in 1967 Irwin began to assemble wing and tail measurements of *Gypohierax* from the large series in London, Paris, Brussels and Tervuren. In addition he obtained information on those in the collections in New York and Chicago as did Donnelly for material in South Africa. While there are undoubtedly many other study skins, the 177 specimens measured are considered to provide a reasonably adequate sample, perhaps of about two-thirds of those in existence. They are, however, somewhat unevenly distributed geographically, by far the greater number coming from the Congo Basin and peripheral areas (see Table), where the oil palm *Elaeis guineensis*, on which it is partially dependent, is most abundant.

For the purpose of this analysis the material has been divided into four major areas, which, although unequal, would seem to form largely natural geographical units between which there is probably little gene-flow. For each geographical grouping the wing and tail measurements were processed by computer (No. I. C.L. 1301) to give means, ranges, one standard deviation and twice the standard error (see Figure). These four areas are:—

(A) Fernando Poo in the Gulf of Guinea;
(B) West Africa, west of the Cameroon Highlands;
(C) The Congo Basin and peripheral equatorial areas, including Uganda, Angola and northern Botswana;
(D) Eastern and south-eastern Africa.

While there may be some gene-flow along the coastal areas linking either side of the Cameroon Highlands, West Africa seems sufficiently isolated from the more eastern equatorial area by distance alone. The Fernando Poo population, 32 km from the African mainland, is likely to be a virtual isolate judging from the number of endemic subspecies (Moreau 1966: 320). The population found in the eastern part of Africa and extending southwards along the Moçambique plain is separated from that in Uganda by the Kenya Highlands (see White 1965: 42). It is vagrants, several in immature plumage, in all probability from the east coast, that are not infrequently recorded in South Africa and Rhodesia (Donnelly & Irwin in prep.). The possibility of some birds wandering south from Angola cannot be discounted: the two birds from northern Botswana were probably derived from this source.

In all groups a wide range of overlap was found between measurements of adults and free-flying juveniles. Their measurements have been lumped and this has assisted greatly where the sample is a limited one, as a high proportion (more than 40%) comprise birds that have not yet assumed adult plumage.

The sexes too have been combined together with unsexed material for analysis (Figure) to indicate an overall trend within the geographical groups. Also, apart from giving the means for each sex (Table), the small size of samples in groups A and D precludes a separate analysis of sexes.

In each of the groups males outnumber females with a combined total of 98 males to 53 females. This almost 2: 1 ratio may reflect a true genetic character. On the other hand, some feature of male behaviour may render it more prone to collection and this requires further investigation.

At a casual glance the total means for the wing measurements would seem to indicate no sexual dimorphism in size whatever (Table), but when these are considered geographically a slightly different picture presents itself. As is to be expected with birds of prey, there is a tendency for females to be larger than males, but the differences are not nearly so marked as is often the case. This points to a marked absence of intraspecific competitive feeding, TABLE

Gypohierax angolensis: Means of wing and tail measurements (in mm) from four geographical areas in Africa. A, Fernando Poo; B, West Africa west of Cameroon Highlands; C, Congo Basin, Uganda, Angola and Botswana; D, Eastern and south-eastern Africa. Sample sizes in brackets.

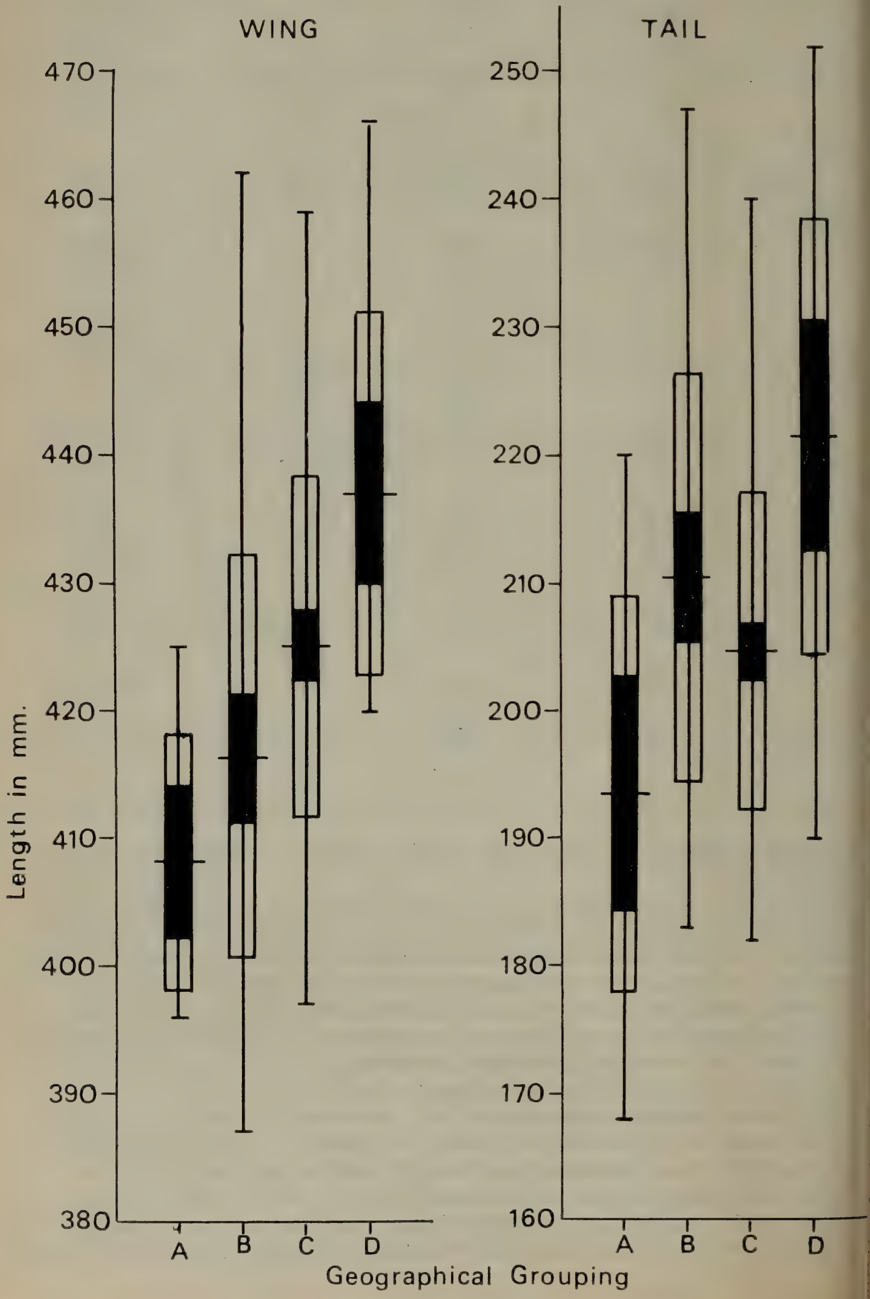
	Group	♂♂	♀♀	*Total (with unsexed birds)*
Wing	A	404.8 (7)	414.7 (4)	408.1 (12)
	B	411.2 (16)	422.4 (8)	416.4 (42)
	C	423.8 (68)	428.3 (37)	425.1 (107)
	D	447.1 (7)	424.5 (4)	436.8 (16)
Total		426.4 (98)	426.1 (53)	
Tail	A	192.6 (7)	192.0 (4)	193.5 (12)
	B	202.9 (15)	217.0 (7)	210.3 (40)
	C	204.6 (66)	203.4 (38)	204.7 (105)
	D	220.6 (6)	227.4 (4)	221.4 (15)
Total		206.3 (94)	205.7 (53)	

probably resulting from the wide variety of food taken by this peculiarly adapted monotypic genus (see Brooke & Jeffery 1972). The predominance of males in a group tending towards the larger size range (Group C) has erroneously increased the overall male mean to virtually that of the female mean. This alone illustrates that a considerable amount of caution may be required before any set of measurements from a wide or undefined geographical area can be accepted at its face value. The larger mean in the wing length of males in Group D has been strongly biased by two birds measuring 466 mm in this rather small sample. Small sample size, too, may account for the slightly larger tail length in males of group A.

Excluding Fernando Poo (Group A), the overall trend in wing lengths shows a distinct cline with, in general, an increase in size from west to east (Figure). The precise reason for this is not clear and would not seem to involve Bergmann's Rule, as the greater part of the populations come from within 10° of the equator and from below 1000 metres a.s.l. However, the cline does follow the diminution of rainfall eastwards, with slightly larger

FIGURE

Gypohierax angolensis: Means, ranges, one standard deviation and twice the standard error of wing and tail measurements (in mm) from four geographic groups in Africa. A, Fernando Poo; B, West Africa west of Cameroon Highlands; C, Congo Basin, Uganda, Angola and Botswana; D, Eastern and south-eastern Africa.



birds occupying drier and more savanna-like habitats. The population of Fernando Poo is smaller than that from the West African mainland and is almost statistically discrete from birds of eastern Africa (coefficient of difference = 1.18). Moreau (1966: 308) mentions the tendency for insular birds to become larger than their mainland counterparts "and this preponderance is very marked in the islands of the Gulf of Guinea". *Gypohierax* on Fernando Poo do not conform with this generalisation, but as Moreau states, the island is "very wet, the vegetation rich" and this agrees with our suggestion that, at least in *Gypohierax*, smaller sized birds occur in wetter environments, Basilio (1963: 7) giving the minimal annual rainfall on Fernando Poo as 11,000 mm. Tail measurements, too, suggest clinal variation but these have been offset by a somewhat high mean in the West African population. To what extent tail length and area influence the more rigid wing length and wing loading aspects of aerodynamics is not certain but moderate variation in tail length may not alter the flying characteristics of *Gypohierax*.

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References:

Basilio, A. 1963. *Aves de la Fernando Poo*. Coculsa, Madrid: Coculsa.

Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. Stuart. 1970. Notes on the birds of Zambia: part V. *Arnoldia* (*Rhodesia*) 4 (40).

Benson, C. W. & Irwin, M. P. Stuart. 1968. Taxonomic notes on Congolese birds. *Rev. Zool. Bot. Afr.* 77 (1/2): 44–49.

Brooke, R. K. & Jeffery, R. D. 1972. Observations on the biology of *Gypohierax angolensis* in western Angola. *Bull. Brit. Orn. Cl.* 92: 15–21.

Donnelly, B. G. & Irwin, M. P. Stuart. In prep. The distribution of the Palm-nut Vulture, *Gypohierax angolensis* in eastern and southern Africa.

Irwin, M. P. Stuart & Benson, C. W. 1966. Notes on the birds of Zambia: part II. *Arnoldia* (*Rhodesia*) 2 (37).

Moreau, R. E. 1966. *The bird fauna of Africa and its islands*. London & New York: Academic Press.

White, C. M. N. 1965. *A revised check list of African non-passerine birds*. Lusaka: Government Printer.

Observations on the biology of *Gypohierax angolensis* in western Angola

by R. K. Brooke & R. D. Jeffery

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The Sisal *Agave* and Oil Palm *Elaeis guineensis* plantations situated along the Central Cubal River (c.12°10′S, 13°55′E) (there are three Cubal Rivers in Angola) in the Benguela District of Angola and at the Cuula River mouth which reaches the sea just south of the boundary between the Benguela and Cuanza Sul Districts were visited by R. D. J. in the second half of July in

1970 and 1971. The Vulturine Fish Eagle *Gypohierax angolensis* (Gmelin) was exceedingly common in both areas and the opportunity was taken to study them with particular reference to their feeding and breeding. This paper sets out his observations and integrates them with what is known from the literature available to us.

Along the Central Cubal River most of the natural vegetation has been cleared and the land planted with Sisal which forms a thick mat and makes ground hunting by aerial predators and larger terrestrial ones well nigh impossible. Dotted here and there among the sisal were great Baobabs *Adansonia digitata* which were too large to be readily removed. There was a plantation of Oil Palms some three quarters of a mile long on the south bank of the river and immediately across the river there was a great, bare, granite massif shaped like an elephant (geologically a whaleback), the western base of which was thickly wooded as also the river bank itself. Downstream from the whaleback the river widened and permitted the development of many reed covered islets.

The Cuula River reaches the sea through a half mile wide gap in high sandstone cliffs. The flat ground between the river and the steep hillsides and cliffs on either side were planted with Oil Palms. On top of the cliffs and on the hillsides the natural vegetation was grassland with a few scattered bushes and trees not exceeding seven feet in height.

Distribution and type locality: It is universally held that *G. angolensis* is numerous and widespread in western Angola, particularly where Oil Palms grow, and occurs in all habitats from gallery forest to grassland (Traylor 1963, Pinto 1966, Cannell 1968). We concur. The natural habitat of the Oil Palm is well drained but well watered ground near rivers where there is a break in the forest canopy (Hartley 1967: 4). The Oil Palm does not occur naturally south of the Cuanza River (Hartley 1967: 6) which is well to the north of Benguela District, and plantations have only been established there this century (Hartley 1967: 17–20). The *Gypohierax* of our study areas have subsequently expanded their breeding range southwards with the development of plantations. A corollary is that "*Falco angolensis* Gmelin 1788: Angola", must have been described from material taken on the Cuanza River or somewhere north of it. We therefore restrict the type locality of *Gypohierax angolensis* (Gmelin) to Luanda, Angola, which is north of the Cuanza River and a pre-nineteenth century settlement.

Population: Along the Central Cubal River where there were Oil Palm plantations R. D. J. saw at least 75 *Gypohierax* per mile as well as scattered individuals well away from the river. This corresponds well with the 40 or so in a half mile on the shore of Pemba Island (Pakenham 1943). At the Cuula River mouth the population seemed no less dense. Birds in pied adult and dull brown immature plumage were equally numerous in both areas, unlike along the Congo River where Chapin (1932) found adults more numerous than immatures. Basilio (1963) states that immature plumage is retained for three or four years.

Gypohierax lays a single egg and does not necessarily breed every year (see below). It is an optimistic assumption that a pair of *Gypohierax* raise a youngster who lives long enough to breed every other year and thus it seems that the immature plumage is likely to last for four years unless the species does not breed immediately on attaining adult plumage.

Calls: Gypohierax was not heard to call in flight (unlike by Serle 1954) but only when perched. The common call, a cawing "kwuk, kwuk, kwuk" as in

Brown & Amadon (1968) or "cuor, cuor, cuor" as in Pinto (1966) was often heard and may be given largely to maintain contact between mates. When birds were disturbed by R. D. J. climbing to their nests they would fly to the next tree and utter a jumbled series of dog-like barks and long, deep growls, the latter being, apparently, the "karrr" of Brown & Amadon (1968). Only one bird showed active aggression and this was at a nest containing a nestling: it made several close passes at the investigator. In Fernando Poo it is silent except for a quiet monotonous hissing whistle when courting (Basilio 1963).

Roosting: Birds not engaged in brooding roost communally in small parties of up to a dozen or so birds in Oil Palms or Baobabs. When in Baobabs they were often joined by Hooded Vultures *Neophron monachus*. Young (1946) noted that they avoided Oil Palms as roosts but it appears to be regular in Angola as Cannell (1968) also remarked on such roost sites.

Diet: Brown & Amadon (1968) give the food as: "husks of Oil Palm nuts; crabs, molluscs, etc. picked up on the sea shore; stranded and occasionally live fish which are snatched from the surface. It is accused of taking poultry and domestic cats, but this is doubtful. Giant snails and locusts." The domestic cat record is authentic (Sclater & Moreau 1932), albeit unusual. Lowe (1937), Walker (1939), Thomson & Moreau (1957) and Donnelly & Irwin (1972) make it clear that not only marine crabs but also fresh water crabs are freely taken. North (1944) saw one catch and eat a lizard. Chapin (1932) found rodent fur in a stomach. We do not find Belcher's (1930) account of boring into *Raphia* Palms for grubs incredible. Hutson & Bannerman (1930) mention scavenging or hunting at veld fires in Nigeria, and Thomson & Moreau (1957) record several birds feeding at a dead buck. Verheyen (1953) found the remains of lion kills in stomachs and watched one try to take a fish from a Yellow-billed Kite *Milvus migrans*. Mrs. M. K. Rowan (*in litt.* to Peter Steyn) saw several at a carcass with various vultures at Mkusi Game Reserve in Natal but they were not seen to feed. Subsequently she saw several *Gypohierax* drinking and bathing at a waterhole with various vultures. I. Garland (*in litt.* to Peter Steyn) on the coast of Zululand has watched *Gypohierax* take up observation posts at the tops of dunes and plane down to take individual Sea Lice (*Hippa* sp., Crustacea) at the water's edge. Basilio (1963) examined five stomach contents: both adults contained nothing but Oil Palm nut husk remains, a bird moulting into adult plumage had eaten grain, an immature bird had eaten nut husks and crabs and the other immature contained husks and the bones of a small mammal. He believes that in Fernando Poo the adults are purely vegetarian but that they feed a purely animal diet to the nestlings and that it is only after they have fledged that they introduce Oil Palm nut husks into their diet. He adds that he was told that the parents will hide a carcass till it has rotted sufficiently to feed to the young. The latter seems unlikely but should be studied. The former may be true in Fernando Poo but not universally as a number of stomach contents reported in the literature as containing animal remains must surely have come from adult birds though this is not stated. North (1944) watched an adult catch and *eat* a lizard. Observations on adults feeding themselves are therefore required.

In Angola, Pinto (1966) examined four stomach contents. Those from the two adult specimens contained nothing but the husks of Oil Palm nuts. One of the immatures had such husks in its stomach and it and the other immature also had bits of red meat and crabs. He adds that they scavenge on road surfaces, a point also made by I. C. Cannell (pers. comm. to R. K. B.). Pinto (1966) adds that he was told that they take nestlings of the Spot-backed Weaver *Ploceus cucullatus*, apparently after the manner of the Gymnogene *Polyboroides radiatus*, yet Serle (1954) records Vieillot's Black Weaver *Ploceus nigerrimus* flocking to build under nest of *Gypohierax*.

Several birds were seen by R. D. J. to "still-hunt" from branches overhanging rivers. Others made short flights low over both rivers and the sea. During one such flight a fish was caught by a sudden plunge beneath the sea from which the bird appeared to have no difficulty in emerging and becoming airborne with its prey. Thomson & Moreau (1957) and Cawkell & Moreau (1963) record *Gypohierax* catching live fish in the Gambia River.

A nest used in 1970 was re-examined by R. D. J. in 1971 and found to contain a large number of empty snail shells, presumably fed to the nestling after his 1970 visit. All the snail shells had a section removed from the side of the shell through which the flesh had been removed and devoured. It appears that the upper mandible is not sufficiently long and thin to extract the flesh through the entrance after waiting for the snail to emerge as do Everglade Kites *Rostrhamus sociabilis*. In any case that technique is a slow one (Brown & Amadon 1968) and it would not be an economic use of energy for so large a bird as *Gypohierax* to wait so long for so small a morsel. Nests with young contained plenty of food remains, usually too fragmented for identification by inspection on the site. However, three carcases were identified in different nests: a half pound Yellowfish *Barbus* sp. from the river, a largely plucked dove, the hindquarters of a Giant Rat *Cricetomys gambianus*. It appears that the powerful claws which intimidate Brown's (1970: 137) zoo keeper friend are sometimes put to good use.

Interspecific ecology; It appears that *Gypohierax* is a very versatile feeder as also remarked by Cawkell & Moreau (1963). As noted above the natural habitat of the Oil Palm is well drained but well watered ground along rivers. It is therefore not surprising that *Gypohierax* is largely an eater of riverine products when not eating Oil Palm nut husks. *Gypohierax* is of uncertain taxonomic position having been placed with the vultures, the fish eagles and the gymnogenes by different authors. It is probably a relict of an old group which has survived the radiation of more modern raptors by its specialized taste for Oil Palm nut husks coupled with its capacity to take a wide range of vertebrate and invertebrate prey, to scavenge carcases of any size and even to take other vegetable food (Basilio 1963, Donnelly & Irwin 1972).

As a scavenger it may occupy a similar feeding niche to that of kites *Milvus migrans* subspp. As noted above Verheyen (1953) watched one try to rob a kite of its food. On Fernando Poo it is the only regular scavenger and the Yellow-billed Kite is only a vagrant (Basilio 1963). In Angola where both are common it, as noted above, scavenges carcasses killed by traffic on road surfaces. As an eater of riverine products it competes in some sense with the African Fish Eagle *Haliaeetus vocifer*. Moreau (1943) thought that the distribution of the African Fish Eagle might be limited by the presence of *Gypohierax* on Lake Tanganyika, and Cawkell & Moreau (1963) said that this was the case in the Gambia. On the Central Cubal River where *Gypohierax* is very common the African Fish Eagle is only an irregular visitor and does not breed (Brooke, Cannell & Jeffery 1971).

As an eater of Oil Palm nut husks it competes in some sense with other feeders on the husks including man. This is not likely to be important in view of the great number of nuts on each tree. In the Angolan plantations the staff do not consider it worthwhile to control the activities of *Gypohierax* as the proportion of the crop that they take is so low despite the abundance of the birds. As a result, they are not disturbed, harried or hunted in any way. Various other birds are recorded as taking Oil Palm nut husks: Pied Hornbills *Tockus fasciatus*, Yellow-casqued Hornbills *Ceratogymna elata*, Black-casqued Hornbills *C. atrata* (Young 1946), Gymnogenes (Brown 1970: 136), Pied Crows *Corvus albus* (Pakenham 1939), White-throated Bee-eaters *Merops albicollis* (C. H. Fry 1964, *Bull. Niger. Orn. Soc.* 3: 16—a stencilled publication), Grey Kestrels *Falco ardosiaceus* (D. R. Wells 1965, *Bull. Niger. Orn. Soc.* 8: 110). In Brazil the Lesser Yellow-headed Vulture *Cathartes burrovianus* feeds on the husks (Hartley 1967: 603): the Oil Palm was introduced into that country some two centuries ago. In this century it has been introduced as a plantation crop in Indonesia and Malaysia (Hartley 1967) but no raptor, unlike parrots, has been noticed feeding on the husks (Dr. D. R. Wells of the University of Malaya *in litt.* to R. K. B.).

Breeding: R. D. J. climbed to 26 nests in the two seasons, some in both seasons (see Table). All were made of large sticks and were 2–3 feet across and 1–2 feet deep which data correspond closely with the data in Brown & Amadon (1968). Nest size is perhaps the most constant feature of this curious bird's behaviour. All nests were lined with dry grass, wads of sisal fibre which had floated down the river from preparation factories and also faeces, probably including human since they often stank. Leaves were never used. Basilio (1963) says that leaves are sometimes used in Fernando Poo. One nest was placed among the branches of a densely leaved tree near the river, one was on the crown of a hillside *Euphorbia* (the normal site of the Black-breasted Snake Eagle *Circaetus pectoralis* which was not seen in the area) and the remaining 24 in Baobabs where they were 20–90 ft up. Nest height in *Gypohierax* is probably a function of whatever vegetation is present: Serle (1939) in Nigeria found nests up to 200 ft above the ground, whereas

TABLE

Data on nests found

No.	*Date*	*Contents*
1.	18.7.70	C/1
	25.7.71	C/1
2.	18.7.70	C/1
	25.7.71	C/1
3.	18.7.70	empty
	–.7.71	No longer present
4.	20.7.70	empty
	–.7.71	No longer present
5.	19.7.70	C/1
	–.7.71	No longer present
6.	20.7.70	empty
	–.7.71	No longer present
7.	19.7.70	empty
	27.7.71	empty
8.	19.7.70	C/1
	–.7.71	No longer present
9.	19.7.70	C/1
	–.7.71	No longer present
10.	25.7.70	1 y
	–.7.71	No longer present
11.	26.7.71	C/1
12.	25.7.70	1 y
	–.7.71	No longer present
13.	24.7.71	C/1
14.	25.7.71	empty
15.	25.7.71	empty
16.	25.7.71	C/1
17.	25.7.71	C/1
18.	26.7.71	empty
19.	26.7.71	1 y
20.	26.7.71	C/1
21.	26.7.71	C/1
22.	17.7.71	empty
23.	20.7.70	empty
	–.7.71	No longer present
24.	27.7.71	empty
25.	18.7.70	1 y
	28.7.71	empty
26.	27.7.71	C/1

Pakenham (1939) on Pemba Island found no nests above 40 ft. Of the 24 Baobab nests 19 were in stout, lateral forks below the canopy, four were on top of the canopy and one was on a wide, horizontal branch. Such variety of sites in one area is most unusual in large raptors and is perhaps a result of the very dense population along the Central Cubal River. On the equally densely populated island of Pemba nests were equally variably sited (Pakenham 1939). It should be noted that although *Gypohierax* was equally common at the Cuula River mouth no nests at all were found despite search and knowledge of where to look. No nests were found in Oil Palms even though a thorough search of plantations in both areas was made. This may be due to either the unsuitable structure of the palms or to regular harvesting of the nut clusters by plantation labourers. The only certain record of a palm used as a nest site is of an occupied nest found by Peter Steyn (pers. comm. to R. K. B.) on 21 September at Mtunzini in Zululand: it was placed *c.* 55 ft up in a *Raphia* Palm. Cawkell & Moreau (1963) saw an occupied nest in a palm in the Gambia but give no details. Austen's (1953) record was of a youngster in a *Raphia* Palm where no nest was seen and the youngster was already able to fly short distances. Concurrently occupied nests along the Central Cubal River were found down to c. 250 yds apart and, being in isolated trees, were in full view of each other in most cases.

Of the 26 nests found 13 were revisited in 1971, giving a total of 39 nest sites examined in the breeding season (Table). In late July four contained single nestlings varying from 3–30 days in age, 14 contained a single egg, 12 were empty and nine had disappeared, perhaps partly through the activities of birds in search of building materials. Of the empty nests several seemed to be ready for laying in, but others used in 1970 were not refurbished. In one case the empty nest was infested with red ants, doubtless attracted by the remains of food trodden into the nest. In any case Brown & Amadon (1968) point out that refurbishing an old nest and building a new nest both take four to six weeks. It is also possible that individual pairs do not always breed in successive years as is the case in many eagles.

Traylor (1963) mentions a May breeding record from Angola, Pinto (1966) a male with enlarged gonads (3 × 2 cm) taken on 2 July and Erard & Etchécopar (1970) an almost fledged nestling on 11 October which, as they say, came from an egg laid in May. Brown & Amadon (1968) give the incubation period as c. 44 days and the nestling period as probably more than 90 days. Our data (see Table) show that egg laying occurs regularly in May, June and July and perhaps early August, i.e. midwinter as in West Africa to Malawi but there is no evidence for early summer breeding as on the east coast of the continent (Brown & Amadon 1968).

The eggs were variable in shape. The ground colour was white to light brown. Usually they were heavily marked with chocolate smears, blotches or speckles but one was heavily marked with purple blotches and speckles and another was almost completely covered with salmon pink markings. One egg was collected and measures 69.9 × 52.4 mm which is just below the average (12) of 70.7 × 54.0 mm given by Brown & Amadon (1968).

Conclusion: R. D. J.'s observations strongly incline him to agree with Brown (1970: 136) that Vulturine Fish Eagle is a less inappropriate name for *G. angolensis* than Palm-nut Vulture. On the other hand Basilio (1963) with much experience of this species argues strongly in favour of Palm-nut Vulture as has Moreau in Thomson & Moreau (1957). We do not feel that there is yet sufficient ethological evidence to decide the question of the relationships of *Gypohierax* and thus its most suitable vernacular name. We would emphasize the sociability of *Gypohierax* and its lack of intraspecific aggression in areas where an abundant supply of Oil Palm nuts brings them together. This allows them to assemble and maintain very dense populations. When not hunting they sit quietly in small groups and likewise assemble in groups of a dozen or so to roost in Baobabs with Hooded Vultures. We have already discussed their catholic feeding habits and possible competition with both African Fish Eagles and kites. We have drawn attention to the variability of behaviour in calling and roosting, nest sites and egg colour. It is undoubtedly the most curious raptor in the whole ethiopian region.

Acknowledgements: We are obliged to Peter Steyn for making his file on this species available to R. K. B. for study and use and to Messrs. C. W. Benson, B. G. Donnelly and M. P. S. Irwin for criticizing a draft of this paper and in the case of the latter two gentlemen for showing us drafts of their own work on *Gypohierax*.

References:

Austen, W. M. 1953. Palm-nut Vultures *Gypohierax angolensis* in Raphia Palms at Mtunzini, Zululand. *Ostrich* 24: 98–102.

Basilio, A. 1963. *Aves de la Isla Fernando Poo.* Madrid: Coculusa.

Belcher, C. F. 1930. *The birds of Nyasaland.* London: Technical Press.

Brooke, R. K., Cannell, I. C. & Jeffery, R. D. 1971. New distributional records of raptors in western Angola. *Bull. Brit. Orn. Cl.* 91: 165–167.

Brown, L. H. 1970. *African birds of prey.* London: Collins.

Brown, L. H. & Amadon, D. 1968. *Eagles, hawks and falcons of the world*, vol. 1. London: Country Life Books.

Cannell, I. C. 1968. Notes from Angola. *Ostrich* 39: 264–265.

Cawkell, E. M. & Moreau, R. E. 1963. Notes on birds in the Gambia. *Ibis* 105: 156–178.

Chapin, J. P. 1932. The birds of the Belgian Congo 1. *Bull. Amer. Mus. Nat. Hist.* 65.

Donnelly, B. G. & Irwin, M. P. S. 1972. On the food of the Palmnut Vulture *Gypohierax angolensis*. *Bull. Brit. Orn. Cl.* 92: 22

Erard, C. & Etchécopar, R. D. 1970. Some notes on the birds of Angola. *Bull. Brit. Orn. Cl.* 90: 158–161.

Hartley, C. W. S. 1967. *The Oil Palm.* London: Longmans.

Hutson, H. P. W. & Bannerman, D. A. 1930. The birds of northern Nigeria. *Ibis* (12) 6: 600–638.

Lowe, W. P. 1937. Report on the Lowe-Waldron expeditions to Ashanti forests and northern territories of the Gold Coast (part). *Ibis* (14) 1: 345–368.

Moreau, R. E. 1943. A contribution to the ornithology of the east side of Lake Tanganyika. *Ibis* 85: 377–412.

North, M. E. W. 1944. Some east African birds of prey. *Ibis* 86: 117–138.

Pakenham, R. H. W. 1939. Field notes on the birds of Zanzibar and Pemba. *Ibis* (14) 3: 522–554.

— 1943. Field notes on the birds of Zanzibar and Pemba. *Ibis* 85: 165–189.

Pinto, A. A. da R. 1966. Notas sobre as coleccoes ornitologicas recolhidas em Angola nas expedicoes efectuadas pelo Instituto de Investigacao Cientifica de Angola da 1959 a 1961. *Bol. Inst. Invest. Cient. Ang.* 3: 149–236.

Sclater, W. L. & Moreau, R. E. 1932. Taxonomic and field notes on some birds of north-eastern Tanganyika Territory. *Ibis* (13) 2: 487–522.

Serle, W. 1939. Field observations on some northern Nigerian birds. *Ibis* (14) 3: 654–699.

— 1954. A second contribution to the ornithology of the British Cameroons. *Ibis* 96: 47–80.

Thomson, A. L. & Moreau, R. E. 1957. Feeding habits of the Palmnut Vulture *Gypohierax*. *Ibis* 99: 608–613.

Traylor, M. A. 1963. Check-list of Angolan birds. *Publ. Cult. Comp. Diam. Ang.* 61.

Verheyen, R. 1953. *Exploration du Parc National de l'Upemba 19. Oiseaux.* Brussels: Inst. Parcs Nat. Congo Belge.

Walker, G. R. 1939. Notes on the birds of Sierra Leone. *Ibis* (14) 3: 401–450.

Young, C. G. 1946. Notes on some birds of the Cameroon Mountain District. *Ibis* 88: 348–382.

The food of *Gypohierax angolensis*

by B. G. Donnelly & Michael P. Stuart Irwin

Received 5th November 1971

Further to that part of the contribution above by Brooke & Jeffery on the food of *Gypohierax angolensis* the following observations are of immediate interest.

On 24 May 1967, an immature specimen of this species was brought into the Port Elizabeth Museum from "Happy Valley", Humewood, Port Elizabeth in the Republic of South Africa, which incidentally constitutes the most southerly existing record in Africa as will be discussed elsewhere (Donnelly & Irwin in prep.). The bird was haemorrhaging slightly from the mouth and later died, though the actual cause of death could not be ascertained. The stomach contents revealed one freshwater crab *Potamonestes pentatus* (wet weight 10 g) and about two handfuls of seed (wet weight 50 g) from the introduced Australian Wattle-tree *Acacia cyclops*, which grows in profusion on the nearby sand dunes. Middlemiss (1963: 419–420) lists twenty-one bird species which are known to utilize the seeds of *A. cyclops*. Of these, the ten larger species, as was found in *Gypohierax*, ingest the entire seed and aril-like funicle.

Also, in the Albany Museum, Grahamstown, there is a specimen, obtained on the Fish River, near Cradock, on 8 May 1937, the contents of whose stomach are given as one bone (large), feathers and hair.

The versatility of feeding techniques and the broad spectrum of the food niche as given by Brooke & Jeffery for *Gypohierax* is again stressed.

References:

Donnelly, B. G. and Irwin, M. P. S. (in prep.) The distribution of the Palm-nut Vulture *Gypohierax angolensis* in eastern and southern Africa.

Middlemiss, E. 1963. The distribution of *Acacia cyclops* in the Cape Peninsula area by birds and other animals. *S. Afr. Journ. Sci.* 59 (9): 419–420.

The type locality of *Agapornis nigrigenis*

by R. J. Dowsett

Received 12th October 1971

The lovebird *Agapornis nigrigenis* (usually considered a race of *A. lilianae*) was described by W. L. Sclater in 1906 (*Bull. Brit. Orn. Cl.* 16: 61). The type locality was given as Muguazi River, N.W. Rhodesia and was stated to be some 15 miles from the confluence of this river with the Zambesi. The spelling Muguazi is followed in most recent standard works, including Benson *et al.* (1971, *Birds of Zambia*), although White (1965, *Revised check list of African non-passerine birds*) does spell it Muguzi, presumably in error.

But no river of this name is known from what is now the Southern Province of Zambia. The type specimen was collected in September 1904 by Dr. A. H. B. Kirkman but it has not been possible to trace Kirkman's travels. Numerous contemporary maps and other documents have been examined in the National Archives of Zambia without success. Neither do local inhabitants have any knowledge of the Muguazi River.

On the other hand there is a river called the Ngwezi within the limited range of *nigrigenis* and it seems that this must be where the type was collected. Furthermore Sclater, in his original description, mentions that Kirkman found *nigrigenis* fairly common on the Majelie River, some twenty miles from the Muguazi and like that river also a northern tributary of the Zambesi. This is presumably the Machili River, which is about fifteen miles north-west of the Ngwezi.

The type specimen is now in the South Africa Museum at Cape Town. Professor J. M. Winterbottom (*in litt.* to C. W. Benson) states that the specimen has two labels, both in Sclater's handwriting, with one reading "N. W. Rhodesia" and the other "Mugwazi River, N. W. Rhodesia". The writing is perfectly clear and cannot be a misreading of Ngwezi. But it seems certain that either Sclater misread the collector's writing or Kirkman himself misheard "Ngwezi" as "Muguazi". I think it reasonable to suggest that the type locality as originally recorded is in error and that it should be:—

> *Ngwezi River*, 15 *miles north of its confluence with the Zambesi, Kalomo District, Zambia, at about* 17° 30′ S., 25° 10′ E.

Although a detailed locality is lacking from the label of the type specimen one is justified by the precise one in Sclater's original description.

A. nigrigenis is common in mopane woodland along parts of the Ngwezi River including the type locality. Indeed six of the sixty specimens in the collection of the National Museums of Zambia at Livingstone are from this immediate area and are probably topotypical. The overall range of *nigrigenis* is from Livingstone west to the Machili River and north to the extreme south of the Kafue National Park, an area considerably less than 100 km from east to west and 200 km from north to south. Along the south bank of the Zambesi in Rhodesia *nigrigenis* is sparse and irregular (G. R. Thomson *in litt.*), although Brooke (1967, *Bull. Brit. Orn. Cl.* 87: 121) does give a breeding record from this area. Smithers (1964, *Check list of birds of Bechuanaland Protectorate*) records it from as far west as Katima Mulilo in the Caprivi Strip, but this is Leppan's record which Benson & Irwin (1967, *Zambia Museum Papers* 1: 42) consider may be erroneous. It is unrecorded and perhaps absent from west of the Machili River in the Western (formerly Barotse) Province of Zambia.

Acknowledgements: I am most grateful to C. W. Benson, R. K. Brooke, M. P. Stuart Irwin and Professor J. M. Winterbottom for advice, and to the staff of the National Archives of Zambia for research facilities.

A further southern African report of the American Pectoral Sandpiper

by A. C. Kemp

Received 27th November 1971

Ginn & Brooke (*Bull. Brit. Orn. Cl.*, 1971: 125–126) have reviewed African records of the American Pectoral Sandpiper *Calidris melanotos*, and have discussed in detail a specimen collected in northern Botswana on 25th April 1971. They also mention another southern African specimen, from Rondevlei, Cape Town. A third is represented by a female in the Transvaal Museum, collected by O. P. M. Prozesky at Rooiwal Power Station, 15 km north of Pretoria, Transvaal, on 1st December 1969. Thanks to M. P. Stuart Irwin, I have been able to compare it with the Botswana specimen and the one mentioned in an editorial foot-note to Ginn & Brooke, both in the National Museum, Bulawayo. It is in winter plumage, and measures as follows:—wing 125, culmen (exposed) 27, tail 58, tarsus 29, middle toe without claw 21 mm. It weighed 47.4 g.

New records from northern Cameroun

by C. de Greling

Received 6th November 1971

INTRODUCTION

I lived in northern Cameroun from November 1965 to July 1967, mainly in the Waza National Park, but I also travelled extensively in northern Cameroun between 8° N. and 12° N. This part of the country belongs to the Soudanian savanna zone, with some Sahelian savanna mostly north of 12 N.

Little collecting has been done in this area, but some records can be found in Bannerman (1936–51), Good (1952–53), Malbrant & Maclatchy (1949), and Dragesco (1961), who collected in the Waza National Park; and see also Bates (1930).

The notes which follow are confined to species little known in northern Cameroun, most of them actually not previously recorded at all. Most of my specimens were collected in the Waza National Park, and are now in part at the Ecole pour la formation de spécialiste de la faune at Garoua, and in part at the Muséum National d'Histoire Naturelle in Paris. They were identified with the help of M. Francis Roux. For nomenclature I have normally followed White (1961–65).

SYSTEMATIC LIST

Egretta gularis: Previously unrecorded in northern Cameroun, a Reef Heron was seen on 23rd March 1966 at Zizuague. It had the chin and throat white and the bill brown, characters which separate it from the dark phase of *Egretta garzetta;* see Etchécopar & Hüe (1964), whose nomenclature moreover I follow in this particular case rather than that of White (1965).

Aythya nyroca: Previously unrecorded in northern Cameroun, a White-eyed Pochard was seen on a water hole in the "yaere" (flat and treeless savanna inundated during the rainy season) in the Waza National Park on 3rd March 1966.

Circaetus gallicus: Short-toed Eagles (singles) were seen in December 1966 and on 27th March 1967 at Waza. Previously known from Zaria in Nigeria and Dan Kaba in northern Hausaland (Bannerman 1930), also from Darfur as a common winter visitor (Lynes, *Ibis*, 1925: 459).

Elanus riocourii: A flock of about 200 Swallow-tailed Kites seen in the Waza National Park on 14th April 1966, and single birds seen at Waza on 4th February and 18th April 1967, are the first records from northern Cameroun.

Coturnix delegorguei: A male Harlequin Quail was collected at Maroua on 12th September 1966, and is the first record from northern Cameroun.

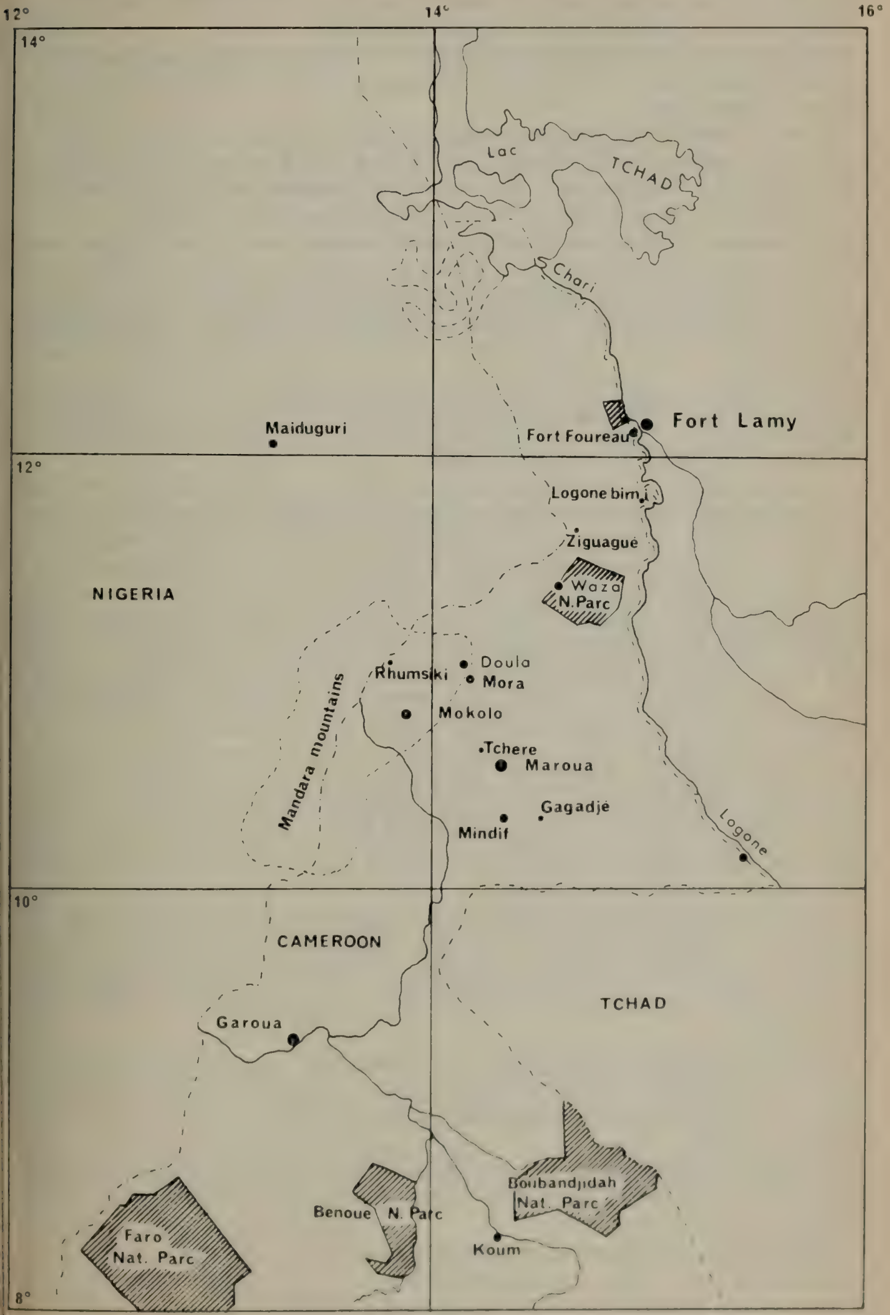
Vanellus superciliosus: A Brown-chested Wattled Plover was seen at Maroua on 27th July 1967, and seems to be the first record from northern Cameroun.

Limosa limosa: Single Black-tailed Godwits were seen at Waza on 28th March and 25th April 1966, and 10th April and 10th June 1967 (also a flock of ten on 1st July 1967); and at Maroua on 15th September 1967.

Rostratula benghalensis: Painted Snipe were recorded at Waza on 5th May 1966, and at Maroua, where it breeds (a nest with four chicks not more than a few days old was found on 13th September 1967).

Sterna leucoptera: White-winged Black Terns occurred in small numbers each year in January in the "yaere" between Waza and Fort Foureau. This species was already known from Lake Chad and the lower Chari River, but had not previously been recorded from northern Cameroun.

Turnix hottentota: To the few records of the Hottentot Buttonquail (race *T. h. nana*) from West Africa can be added one collected at Rhumsiki in the Mandara mountains on 9th October 1966.



12°
14°
16°
14°
12°
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8°
Lac
TCHAD
Chari
Maiduguri
Fort Foureau
Fort Lamy
Logone bimi
Ziguagué
Waza N. Parc
NIGERIA
Rhumsiki
Doula
Mora
Mokolo
Mandara mountains
Tchere
Maroua
Gagadjé
Mindif
Logone
CAMEROON
TCHAD
Garoua
Boubandjidah Nat. Parc
Benoue N. Parc
Koum
Faro Nat. Parc

Apaloderma narina: Narina Trogons of the nominate race were collected at Maroua on 12th June 1967, and 30 km to the northward on 28th May 1967.

Lybius dubius: Bearded Barbets were seen near Maroua on 31st January 1966, and in the Logone gallery forest at Logone Birni on 16th January 1967. This species is uncommon in northern Cameroun.

Jynx torquilla: The first record of a Wryneck from northern Cameroun was a bird which I rescued from the swimming pool of the Maroua Club House on 10th April 1967.

Lanius cristatus: The Isabelline Shrike *L. c. isabellinus* was already known from Ngaoundere, Rei Bouba and Fort Lamy, but there are no other earlier records from northern Cameroun. One was collected at Logone Birni on 11th January 1967, and one was seen at Waza on 30th March 1967.

Lanius minor: The Lesser Grey Shrike is known from Zinder (Niger) and Fort Lamy (Chad). I saw one at Waza on 21st October 1966.

Oriolus oriolus: Golden Orioles are regular visitors to northern Cameroun and were seen each year, especially in gardens at Maroua, until as late as 22nd April. There is one previous record from Cameroun, from Efulen (Bates 1930).

Cinnyricinclus leucogaster: Amethyst Starlings were seen on 25th April and 5th June 1967 at Gagadje. They are commoner further south. This species migrates northward for the rainy season.

Oenanthe oenanthe: A wheatear with the characters of the race *O. o. seebohmi* was present at Waza on 30th and 31st March 1966. The bird spent much time in a tree outside my house, and I was able to check carefully its plumage and behaviour against the descriptions in Bannerman (1936) and Etchécopar & Hüe (1964). Unfortunately it could not be collected, so it is not possible to be entirely certain about the identification, which would constitute the first record south of the Sahara. It differed from nominate *O. o. oenanthe* by having the throat black, extending almost to the shoulders. The crown, mantle, back and scapulars were pale french-grey as in *O. o. oenanthe. O. o. seebohmi* is found in southern Morocco, and its wintering area is uncertain.

Cercomela melanura: A Black-tailed Rock-Chat seen at Waza on 10th April 1966 is the only record from northern Cameroun, and is a long way from the most south-eastern record of *C. m. airensis* quoted by Bannerman (1936), from Timia in Niger at ca. 18 N., 8° 45′ E. This bird was 'a very small Warbler-like greyish-brown', with a 'black tail', the best guides to identification as per Bannerman (*op. cit.*).

Monticola saxatilis: Four single Rock Thrushes were observed: Waza on 5th and 12th March 1966, and 16th March 1967; Koum, 5th March 1967. The last record, at 8° 30′ N., is of special interest, being rather far south for this species, which furthermore has not been previously recorded from Cameroun.

Monticola solitaria: Also previously unrecorded from Cameroun, Blue Rock Thrushes were seen in both winters: single birds at Waza on 13th January, 5th March, 30th November and 3rd December 1966, and on 21st February 1967.

Cossypha heuglini: White-browed Robin-Chats, not previously recorded west of the Shari River, were seen several times in the Logone River gallery forest at Logone Birni.

Passer luteus: An example of this arid zone species was seen at Waza on 22nd April 1967. This is a southward extension of range for the Golden Sparrow, and the first record from northern Cameroun.

Ortygospiza atricollis: Quail-Finches, previously unrecorded from northern Cameroun, were found in flocks in the high grasses of the "yaere" on the eastern border of the Waza National Park on 19th January and 10th June 1967, and were also seen at Rhumsiki in the Mandara mountains on 15th October 1966.

Lonchura cucullata: Nominate *cucullata* was collected in gallery forest at Logone Birni. This is an extension of range for this race of the Bronze Mannikin.

ACKNOWLEDGEMENTS

I should like to thank Dr. J. S. Ash, Dr. C. H. Fry and Mrs. B. P. Hall for commenting on these notes.

References:

Bannerman, D. A. 1930–51. *The birds of tropical West Africa.* Vols. 1–8. London: Crown Agents.

Bates, G. L. 1930. *Handbook of the birds of West Africa.* London: Bale & Daniellson.

Dragesco, J. 1961. Oiseaux des savanes d'Afrique equatoriale. *Oiseau* 31: 178–192, 261–271.

Etchécopar, R. D. & Hüe, F. 1964. *Les oiseaux du nord de l'Afrique.* Paris: Boubée.

Good, A. I. 1952–53. The birds of French Cameroon. *Mem. Inst. Franc. Afr. Noire, Ser. Sci. Nat.* 2–3.

Malbrant, R. & Maclatchy, A. 1949. *Faune de l'équateur africain français.* Paris: Lechavelier.

White, C. M. N. 1961–65. *Revised check lists of African birds.* Lusaka: Government Printer.

(The cost of reproduction of the map in the above paper will be borne by the author—Ed.)

The status of *Oceanodroma tristrami* Salvin

by R. Wagstaffe

Received 8th November 1971

A single specimen in the above genus was forwarded (date uncertain) to America by Tristram for examination by Stejneger, as in Tristram's view it did not conform with any then known species of petrel in the genus *Oceanodroma.* The particulars of this specimen are:—

♂, Sendai Bay, Japan, July 1874. Collected by Lt. Gunn, R.N. Tristram reg. no. 9781.

Stejneger concurred with Tristram's view and suggested the name *tristrami* for the bird, which name Salvin subsequently adopted (*Cat. Birds Brit. Mus.* 26, 1896: 354). The latter believed it to be closely allied to his *Cymochorea markhami* from the west coast of Peru (*Proc. Zool. Soc. Lond.*, 1883: 430) except for a slightly shorter tarsus and a more plumbeous head and mantle. Moreover, Salvin remarks that as the wing feathers are not fully grown he could not compare the wings of the two birds for their respective lengths, otherwise their respective dimensions appeared to him to be nearly the same. Until lately all trace of this bird seemed to be lost, but recently it was discovered by the writer in the collections of the Liverpool City Museums.

Mathews & Iredale, however, presumably in the belief that Salvin's holotype was to remain indeterminable owing to loss, described (*Ibis*, 1915: 581) on the flimsiest possible basis *Cymochorea owstoni* as being separable from *tristrami* on measurements. The type of *owstoni*, which came from Okinose, Sagami Sea (Yokohama Bay, Japan), was recently assessed by Dr. Robert Cushman Murphy in relation to the measurements of *tristrami*, which in millimetres are as follows:—

Wing 190, tail 93, tarsus 28.4, middle toe with claw 31.3, exposed culmen 18.7.

This assessment confirmed Dr. Murphy's opinion and my own that *owstoni* must be considered an absolute synonym of *tristrami*. Comparison with a number of specimens of *markhami* in the British Museum (Natural History) and one specimen in the Liverpool City Museums completely confirms the nomenclatorial rank of *tristrami* as being a valid race of *markhami*.

I am grateful to Dr. Murphy, Mr. C. W. Benson and the authorities in the British Museum (Natural History) for their assistance in the preparation of this note.

[Measurements of the type of *owstoni*, taken from Mathews & Iredale, *loc. cit.*, and agreeing closely with those given above for the type of *tristrami*, are as follows:— wing 184, tail 100, tarsus 28.5, culmen 19 mm. The middle toe is given as 27 mm, presumably excluding the claw.—Ed.]

Possible hybrid *Jynx* is an aberrant *Jynx ruficollis*

By L. L. Short & W. J. Bock

Received 22nd November 1971

Through the kindness of Prof. Charles G. Sibley we have been able to examine the possible hybrid *Jynx ruficollis* × *J. torquilla* from Tanzania reported by M. Desfayes in *Bull. Brit. Orn. Cl.* 89, 1969: 110–112. From our study of the specimen, a female, we conclude that the likelihood of it representing such a hybrid is negligible, and it is, we feel, simply an aberrant specimen of *J. ruficollis*. Dr. Charles Vaurie, who also looked at the specimen while it was in our care, fully concurs in this determination. The only aberrant features of the specimen are its extreme barring ventrally, including the under-wing coverts, and its lack of rufous on the throat and under-tail coverts. In every other character it appears to fall within the range of variation of *J. ruficollis*. We here consider the points mentioned by Desfayes (*op. cit.*), along with a few additional characters. The quoted statements are from Desfayes (1969).

Dorsal Coloration: "Upper parts very similar to *torquilla* but more rufescent . . .". This simply is not so, the specimen being like *ruficollis*, and differing from *torquilla* in its rusty tone and in its more even, less peppered coloration, due to the great reduction of white markings and of grey colour compared with *torquilla*. "Black on middle nape and back extensive as in *torquilla* . . .". The black mark in this region is so variable in both species that the questionable bird matches specimens of both.

Wings: The wings are distinctly unlike *torquilla* and like *ruficollis* in having large black marks on the coverts, and in the very reduced white spots bordering these black marks. Just as the under-parts are barred, so too are the under-wing coverts, which resemble those of *torquilla* but have a rusty, not buff background. We do not consider this to be a trait of *torquilla*, but merely an extension of the pervasive tendency for strong barring so evident on the under-parts. "The pattern of the inner tertials is intermediate between the row of well separated spots of *ruficollis* and the continuous black design of *torquilla*". Actually, the pattern on these feathers resembles that of *ruficollis* because the bordering white spots about the black markings are small, not large as in *torquilla*. The size and continuity of the black markings themselves vary in both species, with overlap such that the problem bird can be matched by specimens of both.

Tail: "That part of the tail projecting beyond the tip of the under tail-coverts has five dark bars as in *ruficollis*, against three in *torquilla*. The total number of well-defined bars on the tail of *ruficollis* is 10, of the hybrid 10 and of *torquilla* 5". As this implies, the tail of the putative hybrid is identical in pattern with that of *ruficollis*, and it is identical in colour as well (rusty tone, lack of fine grey and white barring, and generally restricted amount of white).

Head: ". . . lacking both the chestnut throat patch of *ruficollis* and the buff throat colour of *torquilla*. Throat finely barred, but less distinctly than either *torquilla* or *ruficollis*". The sides of the head and throat are barred peculiarly (see under-parts), but the bars are numerous as on the sides of the throat of *ruficollis*, and the background color is rusty as in *ruficollis*, not buff as in *torquilla*. We note that the vague whitish superciliary mark and the characteristic dark ear mark of *torquilla* are totally absent in this supposed hybrid. The fine black cross bars on its crown resemble those of *ruficollis*. Overall, the specimen resembles some juvenile *ruficollis* that show expanded throat barring and limited rufous on the throat and breast, but the barring is somewhat unusual and the rufous is absent.

Under-parts: The problem specimen lacks the rufous patch on the breast and throat of *ruficollis*. It is noted that this patch is variable, and often very small in juveniles of that species, hence variant juveniles and even adults might be expected to occur every so often lacking the patch entirely. The under-parts otherwise are barred, but differently from *torquilla*. The barring differs from that of the latter in the presence of extensive black shaft streaks crossing the bars, in the presence of fine melanic spots, and in the occurrence of fine vermiculations in addition to the bars. This peculiar pattern is matched by the pattern of the central breast of a juvenile female *ruficollis* (American Mus. Nat. Hist. No. 552935) from East Africa. An expansion of such a tendency in ventral markings, coupled with loss of rufous in the throat-breast patch and under-tail coverts would result in an individual of *ruficollis* resembling the bird in question. "While *ruficollis* has a dark shaft streak and *torquilla* a transversal mark on each ventral feather, the presumed hybrid has both". Many specimens of *torquilla* have dark shaft streaks evident, and indeed a tendency of this is apparent in the specimen of *torquilla* figured by Desfayes (*op. cit.*, p. 111). Furthermore, well developed transverse marks or bars are found extensively in the under-parts of juveniles of *ruficollis*, and adults of that species show such barring on the flanks and abdomen (again, evident in the specimen of *ruficollis* figured by Desfayes). It is apparent that, aside from the unique peppering and vermiculations of its under-parts, the ventral markings resemble those found in juvenile individuals of *ruficollis* much more than they resemble those of any specimen of *torquilla*.

Measurements: These are entirely as in *ruficollis*, allowing of course for an inordinately worn tail. "Bill . . . stout as in *ruficollis* but not quite as wide at base". The heavy, broad-based bill, broken toward the tip, nevertheless is clearly that of *ruficollis*, specimens of which match it; we could find no match for it among available specimens of *torquilla*. Desfayes ignored the feet and gave only a measurement of the length of the tarsus. The feet, including the tarsi of the specimen are massive and thick as in *ruficollis* and in contrast to their delicate structure in *torquilla;* this is clearly shown in the figure accompanying Desfayes' article. A rather striking difference between the two wrynecks, insufficiently stressed by Desfayes, is the dissimilarity of the outermost primary. This feather, usually rather small in woodpeckers, averages 25.7 mm (range 23.5 to 27.1 mm) in length in 10 adults of *ruficollis*, whereas it averages only 11.9 mm (11.0 to 12.6 mm) in 10 adults of *torquilla*. It is 25.4 mm in length in the putative hybrid, showing no tendency toward *torquilla*. Incidentally, juvenile woodpeckers generally have broader, longer outer primaries than do adults (two juveniles of *ruficollis* had outer primaries 30 and 31 mm in length, and 6.5 and 6.7 mm in width, respectively; see the average and range in length in adults above – their width in adults averages about 5.0 mm), and on this basis, as well as plumage texture, the questionable specimen is an adult.

The wing formula of the specimen was presented by Desfayes. Essentially, its primaries 6–8 are subequal in length, primary 5 is slightly shorter, and primary 9 is shorter than primary 5 (primaries numbered from the inside outward). Not stressed by Desfayes is the fact that both *torquilla* and *ruficollis* vary considerably in wing formula. We have seen specimens of *ruficollis* in which primary 6, 7 or 8 was longest. The major difference between the wrynecks in their wing shape is as follows: *torquilla* has a pointed wing with primary 9 nearly as long as (subequal to) primaries 8 and 7, and longer than primaries 1–6; and, *ruficollis* has a rounded wing with a relatively short primary 9 (shorter than primary 4, and sometimes shorter than primary 3 or even 2), long primaries 4–8, which are almost equal in length, and a strong gradation in length only among the inner primaries (1–4). The problem bird's ninth primary is slightly longer than primary 4, but it does not approach primary 5, to say nothing of primary 6, in length. Its wing is rounded, resembling that of *ruficollis* much more than that of *torquilla*.

Mr. Desfayes noted that the supposed hybrid comes from a locality (Morogoro region of Tanzania) well beyond the southernmost point (northern Uganda, about 500 miles north of Morogoro) at which wintering *J. torquilla* has been taken. Such a hybrid would require an individual of *torquilla* having strayed far south of its normal wintering range, and then having mated, presumably during the winter (breeding season of *ruficollis*) when it is not apt to have been attuned physiologically to the local breeding season, with an individual of *ruficollis* to produce hybrid offspring.

It seems far more likely, especially in view of the close resemblance of the specimen to *ruficollis*, that this puzzling bird represents an aberrant female *J. ruficollis*. It would seem to require only a genetically rather simple modification (recombination, or possibly a mutation) to produce such an individual, especially if there is a correlation at some genetic level between the repression of rufous colouration (throat, under-tail coverts) and excessive ventral mottling and barring. Regardless of the genetics of its features, the specimen lacks the mixture of intermediate traits with some features of both parental species, thus arguing strongly against its being a hybrid between the two wrynecks. We cannot consider its lack of rufous on the throat, breast and undertail coverts to be a character of *torquilla*. The underlying barring that replaces the rufous seems to be that of *ruficollis*. Moreover, replacement of rufous by barring is known to have occurred in *J. ruficollis thorbecki* (this actually represents replacement, because the normal rufous feathers in throats of other races exhibit no incipient bars at their bases or elsewhere, thus implying a relationship between the gene or genes responsible for the rufous colouration and that or those effecting the barring), so the species has the genetic potential for a complete switch to occur, albeit rarely. Having shown that the oddly marked underparts of the specimen, and the absence of rufous in its throat-breast region, vent and under-wing lining cannot be considered intermediate between the conditions of these characters in the parental species, and lacking a mixture of the traits of these species, it seems prudent to treat the questionable specimen as a variant of *Jynx ruficollis* rather than as a possible hybrid of *ruficollis* and *torquilla*.

Our rejection of the specimen as a possible hybrid should not be construed as negating completely the possibility of such a cross, but this would be more likely to occur, if it did so at all, in Cameroun, where *torquilla* winters within the range of *ruficollis*. We are impressed with the general similarity of the two wrynecks, which certainly comprise a superspecies. Indeed, it is remotely possible that they are conspecific, with *ruficollis* a very strongly differentiated, non-migratory, tropical derivative of ancestral *torquilla*. Comparative studies of the two forms may permit solution of this problem, although the lack of contact between their breeding populations and the lack of close relatives of the wrynecks complicate the matter.

A recent record of Bonelli's Warbler in Rumania

by Dan Munteanu

Received 7th October 1971

In Rumania Bonelli's Warbler *Phylloscopus bonelli* is regarded as a rare vagrant, with only a few references to it dating mainly from the last century. Since there is no centralization of the data I will first survey the references to the existence of the species in Rumania.

It was identified for the first time in Transylvania by Stetter (1845), who collected a specimen at Batiz (Hunedoara District) on 24th March 1845. Unfortunately the bird was destroyed by the shot and no skin could be prepared. During their journey through Transylvania Danford & Brown (1875) found that a specimen, shot in May 1873 at Cluj, was preserved in the collection of the town museum. The third Bonelli's Warbler was collected on the hills of Felmer (Brasov District) on 19th August 1889 by Czynk (1891). He shot two more, probably in the neighbourhood of Fagaras, on 10th April 1891 and in August 1891, and observed another on 14th August 1891. Other information on Bonelli's Warbler comes from South Bucovina (south-eastern Carpathians, i.e. in the north-eastern part of the Rumanian sector of the Carpathians), where Luzecki (1892) saw it in 1891 on 11th and 17th May, 19th August, 3rd and 5th September. Luzecki stated that the species is more frequent than generally believed and probably nests in that region. The twelfth, and last, identification of the species in Rumania in the earlier literature dates from 25th August 1904, when Dombrowski (1912) observed a specimen in his private garden in Bucharest.

Unfortunately none of the preserved specimens still exists, so the subspecies cannot be confirmed, and only suppositions can be made. Hartert (1910) thinks that Bonelli's Warblers probably breeding in Bucovina belong to the eastern race, *Phylloscopus bonelli orientalis*. Ticehurst (1938) mentions the two specimens of 1845 and 1873 in the paragraph referring to *P. bonelli bonelli*. In my paper on the systematics and distribution of *Phylloscopus* species (1966) I stated that the Rumanian birds should belong to the subspecies *orientalis*, as Rumania lies in the continuation of the territory populated by this race, whereas in the region between the range of *P. bonelli bonelli* and Rumania's western frontier, *i.e.* Hungary and northern Serbia, the species has never been found.

Recently, on 24th April 1971, while on a journey with Mr. V. Ciochia, I collected a Bonelli's Warbler at Agigea (Dobrudja) in a tree plantation on the coast of the Black Sea, thus reconfirming the presence of the species in the avifauna of Rumania. Further it seems likely that the species really does breed in the Carpathian Mountains, and that my specimen was on migration towards its nesting territory. This opinion is supported by the fact that there was an intense passage of other warblers (*Phylloscopus collybita, P. trochilus, P. sibilatrix, Sylvia atricapilla, S. curruca, Acrocephalus scirpaceus*), flycatchers (*Ficedula albicollis, F. hypoleuca*), and nightingales (*Luscinia* sp.) etc. at the same place.

My specimen is an adult female possessing all the characters of the species (except that the first primary goes beyond the wing coverts only 3.5 mm in comparison with 5.5–8 mm as indicated by Ticehurst), and the comparatively large dimensions, wing 67 mm, tail 46 mm, suggest that it belongs to *P. b. orientalis* (C. L. Brehm).

This opinion is shared by G. Diesselhorst who has confirmed my determination by comparing the Agigea specimen with the Bonelli's Warblers in the Bavarian Zoological Collection (Munich). Moreover, he noticed that, in addition to the data in the literature, there is one more striking difference between the two subspecies of *P. bonelli*, namely the border colour of the greater wing coverts and primaries. In *P. b. orientalis* the greater wing coverts have grey or grey-brown borders, whereas those of *P. bonelli bonelli* are of a green colour both in birds with fresh plumage and those in worn plumage. As for the primaries, they have large green borders in *bonelli bonelli* and narrower pale borders in *orientalis*.

In summary, the bird shot at Agigea on 25th April 1971, after 80 years since the last specimen was collected by Czynk, proves that *P. bonelli* still occurs in Rumania, at least in the migration period; and that Rumanian birds belong to the eastern subspecies *P. b. orientalis*. I have donated the specimen to the Grigore Antipa Museum of Natural History, Bucharest.

Acknowledgements: I am indebted to Dr. G. Diesselhorst who has had the kindness to examine the specimen dealt with in this paper and compare it with material in the Munich Museum; also to Kenneth Williamson for advice, and W. F. H. Ansell for assistance in finalisation of the manuscript.

[Vaurie (1959: 277) thought that *P. bonelli bonelli* might occur in the Carpathians in Poland, i.e. in the extreme south-east of that country. Voous (1960, *Atlas of European birds:* Map 344, p. 246) did not show the species as extending into Rumania at all, nor did Peterson, Mountfort & Hollom (1965, *Field guide to the birds of Britain and Europe*, Revised Ed'n.: Map, p. 246). Present data suggest that *orientalis* may breed in the Carpathians as postulated by Luzecki (1892), though this remains to be confirmed.—Ed.]

References:

Czynk, E. 1891. Über das Vorkomen des Berglaubvogels (*Phylloscopus bonelli* (Vieill.)) in Siebenbürgen. *Ornith. Jahrb.* 2: 206–208.

Danford, C. G. & J. A. H. Brown. 1875. The birds of Transylvania. Part II. *Ibis* (3) 5: 291–312.

Dombrowski, R. 1912. *Ornis Romaniae.* Bukarest: Staatsdruckerei.

Dombrowski, R. 1946. *Pasarile Romaniei.* Translated and completed by D. Lintia. Vol. 1, Bucaresti: Fundatia pentru literatura şi arta. (Not cited in text).

Hartert, E. 1910. *Die Vögel der paläarktischen Fauna.* 1. Berlin: R. Friedlander.

Luzecki, O. J. 1892. Zur Ornis der südöstlichen Bukowina. *Ornith. Jahrb.* 3: 199–201.

Munteanu, D. 1966. Contributii asupra sistematicei si ráspîndirii pitulicilor (*Phylloscopus*) în Romania. *An. st. Univ. Iasi, Biologie* 1: 115–122.

Stetter, F. 1845. Adatok Erdély ornithogiájahoz. *Magyar orvosok és természetvizsgalók Kolozsvartt tartott ötödik nagy-gyulésének munkalatai.* Kolozsvar: 139–161.

Ticehurst, C. B. 1938. *A review of the Genus Phylloscopus.* London: Brit. Mus. (Nat. Hist.).

Vasiliu, G. D. 1968. Systema avium Romaniae. *Alauda*, suppl.: 120 pp. (Not cited in text).

Vaurie, C. 1959. *The birds of the palearctic fauna. Passeriformes.* London: H. F. & G. Witherby. (Not cited in text.)

Williamson, K. 1962. *Identification for ringers. 2. The Genus Phylloscopus.* British Trust for Ornithology, Field guide number eight. (Not cited in text.)

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CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, R. E. F. Peal, 24 Creighton Avenue, London N.10.

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Bulletin of the
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The six hundred and seventy-fifth meeting of the Club was held at the Criterion in Piccadilly, London, S.W.1. on Tuesday, 21st March, 1972 at 7 p.m.

Chairman: Sir Hugh Elliott, Bt., O.B.E.; present: 20 members and 14 guests.

The speaker was Mr. P. J. Sellar, who addressed the Club on birds in Iceland and Greenland. He illustrated his talk with sound recordings and coloured slides.

The breeding season of *Caprimulgus tristigma* in Nigeria

by J. H. Elgood

Received 7th December 1971

Parker & Benson (1971) have raised the question as to whether *Caprimulgus tristigma* breeds in West Africa early in the rains (May) as stated by Brown (1948) or in the dry season (Nigeria, breeding condition, February) as indicated by Mackworth-Praed & Grant (1970). At the Editor's suggestion the present contribution is offered as throwing a little light on the problem.

Prima facie, one would expect any bird that laid its eggs on a bare rock surface to be a dry season breeder, and indeed this is the case for *C. tristigma* in southern Africa. Thus Benson *et al.* (1964) give 32 records of separate clutches, all laid within the period August/November, i.e. in the latter part of the dry season.

Caprimulgus tristigma is not uncommon on inselbergs in south-western Nigeria, but apart from Brown's there appear to be no published breeding records in the ornithological literature. However, in the *Illustrated London News* for 27th January 1962 Maurice Burton wrote a popular article on nightjars in general, which, surprisingly, was illustrated by a series of five photographs of *C. tristigma* from Nigeria showing the habitat, egg-laying site and incubating bird. These photographs had been taken by his daughter, Jane Burton, who had visited Nigeria somewhat earlier and discussed with me the circumstances of the breeding of this nightjar. Unfortunately no date is given for the finding of the nest, although the captions accompanying the photographs strongly suggest a dry season date. Furthermore my discussion with Jane Burton had convinced me that the species was (or could be) a dry season breeder. Accordingly, when on 31st January 1965 I was leading by invitation an excursion, primarily as a rock-climbing exercise, to an inselberg on the Upper Ogun Estate (8° 10′ N., 3° 35′ E.), I was convinced that there was a strong likelihood of obtaining evidence of breeding. The party, about 15 strong, was therefore set to cross the inselberg top in extended order, some 10 paces apart. Confirmation of my prediction came when Prof. Pulvertaft, Visiting Professor in Cancer Research to the University of Ibadan, put up a sitting bird from two eggs.

Rain at the latitude of the Upper Ogun Estate is unusual before mid-March, but the early rains are often of such severity as to constitute a serious hazard to a ground-nesting species. More continuous rain, mainly as more frequent storms, occurs from May onward. Whether Brown's May records applied to an unusual year or to replacement clutches, or whether the breeding season can be protracted in dry years, is quite unknown and calls for further investigation.

In conclusion, the Editor has asked me to draw attention to the fact that *C. r. rufrcollis*, contrary to the statement by Parker & Benson (1971: 119), had already been recorded in West Africa by Traylor & Parelius (1967), from Katiola in the Ivory Coast on 1st January 1965. Traylor & Parelius also refer to two records from Mali of birds taken in October, and to one from Senegal in November; all three specimens being attributed to nominate *ruficollis*.

References:
Benson, C. W., Brooke, R. K. & Vernon, C. J. 1964. Bird breeding data for the Rhodesias and Nyasaland. *Occ. Pap. Nat. Mus. S. Rhod.* 27B: 30–105.
Brown, L. H. 1948. Notes on birds of the Kabba, Ilorin and N. Benin Provinces of Nigeria. *Ibis* 90: 525–538.
Mackworth-Praed, C. W. & Grant, C. H. B. 1970. *African handbook of birds*. Series III, Vol. 1. London: Longmans.
Parker, R. H. & Benson, C. W. 1971. Variation in *Caprimulgus tristigma* Rüppell, especially in West Africa. *Bull. Brit. Orn. Cl.* 91: 113–119.
Traylor, M. A. & Parelius, D. 1967. A collection of birds from the Ivory Coast. *Fieldiana Zool.* 51 (7): 91–117.

The winter distribution of *Larus audouinii*

by K. D. Smith

Received 6th December 1971

Introduction

In the literature (Alexander 1953; Vaurie 1965; Etchécopar & Hüe 1967 amongst others) Audouin's Gull *Larus audouinii* Payraudeau is invariably said to be entirely confined to the Mediterranean, apart from occasional vagrancy outside (Portugal, Aqaba in Jordan, El Faiyum in Egypt), and no authors show it as occurring elsewhere on distribution maps. It is also described as restricted to cliffs, and to be a deep-sea feeder, apparently implying that it is entirely pelagic in the non-breeding season. Thus Whitaker (1905) wrote "essentially a deep-sea species, frequenting chiefly rocky islands, and seldom met with on level expanses of coast or in shallow waters". Meinertzhagen (1930), "apparently essentially a maritime species", gives the impression he had nothing to add to Whitaker. Later authors continue in like vein, thus Peterson, Mountfort & Hollom (1966) "a deep-sea species"; Etchécopar & Hüe (*op. cit.*) give no records outside the Mediterranean and say that "it does not wander much along the coasts"; Bruun & Singer (1970) "less coastal in behaviour, staying further out to sea than most other gulls"; and Lack (1971) describes the species as ecologically separated from other gulls because it feeds far out to sea. But on the strength of recent records along the north and north-west coasts of Africa I believe these generalisations are misleading.

Recent records

Breeding on the Chaffarina Islands, which lie three miles off the headland of Cabo de Agua, in extreme northeast Morocco, was suspected at least as long ago as 1957 (Heim de Balsac & Mayaud 1962), but was not proved until 1966, when Brosset & Olier (1966) estimated there were 1,000 adults present. Heim de Balsac & Mayaud also say "this gull is the commonest of all at the mouth of the Moulouya (more than 200 adults and young) throughout the year, but rarer in winter", but they give no other mainland records for the African coast. I saw only 20 on 27th January 1964 at the mouth of the Moulouya River, which flows into a shallow, sandy estuary three miles east of Cabo de Agua, and six flying past Cabo de Agua on 31st August 1963, eight on 1st September 1963, and one on 24th January 1964.

On the Atlantic coast, where apparently the first record was of an immature collected in Senegal on 11th May 1961, and an adult seen on 13th March 1964 (Morel & Roux 1966), my records in the non-breeding season were, in 1962, five at the sandy mouth of the wadi at Mogador on 8th November, 15 on a shingle beach at the mouth of the wadi at Tamri on 10th to 12th November, one on the sandy beach at Sidi Moussa d'Aglou (45 miles south of Agadir) on 20th November, four on beaches between Tamri and Agadir on 3rd December, and one on a sandbank at the entrance to the tidal estuary at Oualidia on 22nd December; in 1963 six bathing in flood water running over a sandy beach at Cap Spartel (west of Tangier) on 11th January, four on the sands just north of Cap Cantin on 21st October, and 20 at Tamri on 25th December; and in 1964 three at Cap Cantin on 24th February. In addition Graham Bundy (*in litt.*) saw 13 at Tamri on 22nd September 1969. Summer records included 10 immatures on a beach 10 miles north of Agadir on 30th May 1963, and an adult at Mogador on 1st June 1963. To these can be added 20 immatures (mostly second-summer) at Tarhazoute (just north of Agadir) on 7th July, and three near Safi on 8th July 1963 (Brewer *et al.*).

Bundy & Morgan (1969) found them "regular in winter in Tripolitania, with records from August to April, usually met with in small groups. One concentration of 72 birds (66 adults) at Misurata on 16th January 1966, was exceptional". Bundy further informs me (*in litt.*) that in the winter months between 8th January 1965 and 20th February 1966 a total of 141 (116 adults) was recorded along the Tripoli coast, though the counts at Misurata on 16th January 1966 (66 adults, four sub-adults, two first winter) and 20th January 1966 (36 adults, seven first winter) may have involved some of the same birds. Lombard (1965) noted 10-20 in the Gulf of Grara, near Zarziz, Tunisia, on 19th January 1951. Lathbury (1970, and *in litt.*) informed me that "30 or more were seen at Punto Carnera at the southwest corner of the Bay of Gibraltar during October and November 1968. I do not know yet whether they are wintering there or on their way through the Straits . . . this is almost the first record for Spain".

The above sizeable total of 108 between Cap Spartel and Senegal seems to disprove the assertion that this gull is endemic to the Mediterranean. The great majority were seen between Cap Cantin and Agadir, 500 to 650 miles from the Chaffarina Islands, whilst those in Senegal were 1,800 miles away, contrary to the belief that "it does not wander much along the coast". The adult at Mogador on 1st June suggested breeding on nearby Mogador Island, but only nesting Herring Gulls *Larus argentatus* were found there on the 2nd. The exact composition of the age-groups of the wintering birds cannot be given, as it was often difficult to distinguish sub-adults from adults in a closely packed group amongst other gulls, but comparison of my records with the plumage-sequences given by Wallace (1969) shows that birds of all ages were present, with full adults well represented, but in a minority, though of the 13 seen at Tamri by Bundy 10 were adults. As might be expected only one out of 34 summering birds was an adult. But at Misurata

82% of the wintering birds were adult, as opposed to the lower percentage further west, which may indicate that adults more than juveniles tend to remain in the Mediterranean, but this is only speculative.

Habits

It was evident in Morocco that the Audouin's Gulls had a great liking for fresh water. Most of those seen were usually, though not invariably, at the outflow of small non-tidal rivulets, where they spent much time bathing. Even elsewhere they sought fresh water, such as the flood water at Cap Spartel, but some were found on sand or shingle where no fresh water was available, as far as 45 miles south of Agadir. Hollom (1955) wrote that "this species is so generally thought of as restricted to cliffs that I was surprised to find a pair on 16th May on the Silifke lagoon (Turkey) in extremely flat and sandy surroundings, rocky coasts were, however, available within a few miles across the bay". Such a habitat is normal in Morocco, and as their stay coincides with the winter rains of the Mediterranean there is normally no lack of fresh water, though there may be little, or none, between southern Morocco and Senegal. But it does not seem to be a necessity, as there was none available for the Tripoli birds, which were either resting on sandy beaches or on the sea close inshore (Bundy *in litt.*).

The Audouins usually kept together in small groups, but they were very pugnacious when bathing, snapping at the many wintering Lesser Black-backs *L. fuscus* if they came too close. Except when bathing they seemed remarkably inactive throughout the day, standing in groups in rather hunched attitudes for hours on end. Occasionally they flew out to sea, but came down only a few hundred yards from the shore. They never seemed to feed, and Wallace (*op. cit.*), in Majorca, was also puzzled as to where the bulk of the species' food was obtained before discovering that they employed rather specialized techniques. Probably the Moroccan birds fed in the same way, which partly agrees with Lack's definition of them as being ecologically separated from other gulls, but I saw no evidence of their going far out to sea to feed.

Discussion

I do not know on what evidence the quoted generalisations are based, other than on Whitaker, as it has not been possible to make a thorough survey of the European literature, but I question them. The statement that this species is confined to the Mediterranean is obviously fallacious. There are over 4,000 miles of coastline between Senegal and the Cyrenaican border, of which only a small fraction is ever surveyed by ornithologists in winter, and then not annually. Even in Morocco the main coastal road runs parallel to the shore for only short intermittent stretches, and almost all the above records were obtained along these sections. The world population is not large (800-1,000 pairs, Makatsch 1969), therefore many birds could winter in small pockets along the 4,000 miles without being noticed, especially as they are easily overlooked amongst the crowds of *L. fuscus* and *L. argentatus* wintering along the Atlantic seaboard. Whilst some remain in the Mediterranean it seems reasonable to think that far more probably winter between Tangier and Senegal than was formerly realised. But it could be that the west Moroccan records involve range-expansion rather than normal wintering, with possible eventual colonisation of Mogador Island.

It is difficult to know whether the term "deep-water species" infers that they breed only on islands, as they do, or that they winter solely at sea, as I have always interpreted. But how many bird-watchers occupy themselves making methodical observations in winter in "deep-water"? Presumably not many, therefore whatever old evidence there is must have mostly accrued from chance sight records by professional sailors interested in birds, and there cannot have been many of them in Whitaker's day. In fact the records may merely have been of birds travelling between their breeding stations and winter quarters on the coast of Africa. But whatever their mode of life in the Mediterranean, the west Moroccan birds appear to have an inshore, and not a pelagic status in winter, and also apparently in summer.

It is worth noting that the Mediterranean Gull *L. melanocephalus* shows similarities in its winter distribution. Mayaud (1955) could list only two records for the west coast of Morocco, yet in the winter of 1962/63 430 were found between Tangier and Agadir, and over 100 the following winter (Smith 1965), whilst Morel & Roux (*op. cit.*) record them as common in winter on the coast of Mauritanie, with one as far south as Dakar, Senegal, in May.

Summary

The known inshore records of *Larus audouinii* between Tangier and Senegal are assessed, and it is concluded that previous published statements that this species is confined to the Mediterranean and apparently pelagic in winter are inaccurate, at least in so far as Morocco is concerned, with the proviso that recent records there may indicate range-expansion.

Acknowledgements

I am grateful to P. A. D. Hollom for reading this paper, and to Graham Bundy and J. D. R. Vernon for providing data.

References:

Alexander, W. B. 1953. *Birds of the Ocean.* 2nd Ed'n. London: Putnam.

Brewer, A. D. *et. al.* No date. An ornithological visit to Morocco, summer 1963. Cambridge University (cyclo-styled report).

Brosset, A. & Olier, A. 1966. Les Iles Chaffarines, lieu de reproduction d'une importante colonie de Goélands d'Audouin, *Larus audouinii. Alauda* 34: 187–190.

Bruun, B. & Singer, A. 1970. *The Hamlyn Guide to Birds of Britain and Europe.* London: Hamlyn.

Bundy, G. & Morgan, J. H. 1969. Notes on Tripolitanian Birds. *Bull. Brit. Orn. Cl.* 89: 139–144.

Etchécopar, R. D. & Hüe, F. *Birds of North Africa.* London: Oliver & Boyd.

Heim de Balsac, H. & Mayaud, N. 1962. *Les Oiseaux du Nord-Ouest de l'Afrique.* Paris: Lechevalier.

Hollom, P. A. D. 1955. A fortnight in South Turkey. *Ibis* 97: 1–17.

Lack, D. 1971. *Ecological isolation in birds.* Oxford: Blackwell.

Lathbury, G. 1970. A Review of the birds of Gibraltar and its surrounding waters. *Ibis* 112: 25–44.

Lombard, A. L. 1965. Notes sur les oiseaux de Tunisie. *Alauda* 33: 1–33.

Makatsch, W. 1969. Studies of less familiar birds 154. Audouin's Gull. *British Birds* 62: 230–232.

Mayaud, N. 1955. Sur les migrations en Méditerranée et dans l'Atlantique de *Larus melanocephalus. Acta XI Cong. Int. Orn.* 1954: 649–651.

Meinertzhagen, R. 1930. *Nicoll's Birds of Egypt*, 2. London: Hugh Rees.

Morel, G. & Roux, F. 1966. Les Migrateurs Palearctiques au Sénégal, I. Non-Passereaux. *Terre Vie* I–1966: 19–72.

Peterson, R., Mountfort, G. & Hollom, P. A. D. 1966. *A Field Guide to the birds of Britain and Europe.* London: Collins.

Smith, K. D. 1965. On the birds of Morocco. *Ibis* 107: 493–526.

Vaurie, C. 1965. *Birds of the Palearctic Fauna. Non-Passeriformes.* London: H. F. & G. Witherby.

Wallace, D. I. M. 1969. Observations on Audouin's Gulls in Majorca. *British Birds* 62: 223–229.

Whitaker, J. I. S. 1905. *Birds of Tunisia*, 2. London: R. H. Porter.

The nest and eggs of the Little Olive Weaver *Nesocharis shelleyi* Alexander

by L. G. Grimes

Received 20th January 1972

During a seven day visit to Mount Cameroun beginning 29th December 1970 I spent four days in the montane forest and found the Little Olive Weaver fairly common from about 1350 m to 1750 m. Although it is a bird which invariably turns up in skin collections made on the mountain, the nest and eggs have only recently been described by Eisentraut (1956, *Journ. Ornith.* 97: 291 – 300). He found a nest near the Musacko Hut (1830 m) on 9th February 1954 containing three slightly incubated white eggs.

On my first day in the forest while slowly climbing along the main mountain path at a height of 1730 m my head struck an overhanging branch. On the end was suspended a nest and my immediate thought was that it belonged to the sunbird *Cinnyris reichenowi.* This is common in the forest and is known to breed at this time of the year. The nest contained three white eggs and these were removed and photographed alongside my wedding ring. Because the light intensity was low I had to use a long time exposure and the resultant image is slightly blurred. However, it is possible to estimate the size of the eggs from the relative sizes of ring and eggs on the slide. This estimate is 14 – 15 × 9 – 10 mm and agrees with the measurements of Eisentraut. On my last day in the forest I saw the female Little Olive Weaver leaving the nest.

The nest was similar in size and shape to that of a sunbird and had a prominent overhanging porch above the side entrance. The whole of the outer fabric and porch was made from strands of lichen and fibres and the nest was concealed by large over-hanging leaves. Later I discovered a nest of *C. reichenowi* and photographed it, and although similar in general shape to the nest of *N. shelleyi* that I had found there were noticeable differences. The porch was not as prominent and there was no observable lichen in the outer fabric of the nest. This nest contained two eggs that were larger than those of *N. shelleyi* and coloured and marked as described in Bannerman (1953, *Bds. of W. & Equat. Africa.* 2 vols., Oliver & Boyd, London).

Eisentraut (1968, *Bonn. Zool. Beitr.* 19: 49 – 68) later found that the weaver usually used as its nest those of other weavers and sunbirds but occasionally used natural sites such as a hollow clump of moss. It is, therefore, possible that the nest I found was originally that of a sunbird and had been redecorated and used by the Little Olive Weaver.

Acknowledgements: I would like to thank Dr. W. Serle for drawing my attention to the papers by Eisentraut and to Mr. Paul Jenkins for translating them.

Further notes on American and Schioler's Dunlin from Britain

by James M. Harrison & Jeffery G. Harrison

Received 20th November 1971

We (Harrison & Harrison 1971a) listed eight examples of the American race of Dunlin *Calidris alpina sakhalina* (Vieillot) from Britain, all obtained in September/October except one in December and one in January, and which were presumed to have come from North America rather than extreme eastern Siberia.

We now have to record three further examples of this race, two from Kent and one from the Isle of Man. The Kentish birds were obtained on 28th July and 9th October 1971 on the Medway Estuary. The Isle of Man bird is a juvenile moulting into winter plumage and was presented to the Manx Museum by H. M. Rogers of Crosby, Isle of Man, who made a collection of local birds, but full data for this specimen are lacking. However, from its plumage, it is undoubtedly an autumn bird and according to Dr. S. Garrad of the Manx Museum was probably a lighthouse casualty.

Relevant measurements in millimetres of these three specimens are:—

	Wing	Bill		
		from feather margin	from nostril	depth
○ juv., 1st winter. Isle of Man	121	37	30	6·5
♂ ad. 28.vii.71. Medway Estuary, Kent	120	37·5	33	7·5
♀ juv., 1st winter. 9.x.71. Medway Estuary, Kent	119·5	38	33	8·5

These measurements conform to those given for *C. a. sakhalina* in our earlier paper (Harrison & Harrison 1971a).

This brings the toal number of specimens of this race of Dunlin recorded from Britain to eleven. The probability is that all were transatlantic drift migrants, but the ultimate proof as to the origin of these birds, whether American or Asiatic, must await a ringing recovery.

In recording Schioler's Dunlin *Calidris alpina arctica* Schioler, the breeding race of north-east Greenland, from Britain and Eire for the first time and subsequently (Harrison 1969; Harrison & Harrison 1967, 1971b), our identifications were based on museum specimens, and the only supporting evidence from ringing was from four birds ringed on the breeding grounds in north-east Greenland and later recovered in France. Through the kindness of the British Trust for Ornithology, it is now very pleasing to be able to record two further ringing recoveries to support our findings. Both birds were ringed in Britain on migration in May, and recovered on the breeding grounds of *C. a. arctica* in north-east Greenland, as follows:—

Ring No.	Age	Ringing Data	Recovery Data
BN 55.204	Adult	15.v.69. Point of Air, Flintshire, Wales	16.vii.69. Danmarkshavn, Germania Land, n.e. Greenland.
BN 09.085	Post-juv.	22.v.70. Hoylake, Wirral, Cheshire	7.vi.70. Danmarkshavn, Germania Land, n.e. Greenland

Both birds were purposely collected, and are the first ringed examples of *C. a. arctica* to be recovered on their breeding grounds.

A further Kentish example of *C. a. arctica* was obtained on the Medway Estuary on 4th August 1971. It was an adult female with a bill measurement of 27 mm from the feather margin and 22 mm from the nostril. This bird was one of about 50 present that day, all of which appeared noticeably small and short-billed in comparison with the other 550 present. Others were seen on each of the next six days, but no further examples were collected at this time. Obviously there was a marked movement of this race through north Kent during this period.

Westerly and north-westerly winds had blown frequently during late July and early August, and up to 500 Icelandic Black-tailed Godwits *Limosa limosa islandica* were present on the same marsh at this time, while a few days earlier the first Kentish example of the American Dunlin *C. a. sakhalina* recorded above had been obtained.

It is perhaps worth stressing that these racial studies, particularly with supporting ringing evidence, provide important additional knowledge as to migration routes, wintering and breeding areas of distinct populations, which is of vital interest to conservation. As yet the wintering area of *C. a. arctica* remains unknown, but we can now be certain that it is a regular spring and autumn passage migrant in the British Isles.

Acknowledgements: We are grateful to the Curator of the Manx Museum, Douglas, Isle of Man for the loan of the Manx specimen of *C. a. sakhalina* recorded above. All three of the other specimens we collected under a research licence granted through the Nature Conservancy. We must thank Messrs. W. and H. Mouland on whose land these specimens were collected.

References:

Harrison, J. G. 1969. Schioler's Dunlin in Eire. *Bull. Brit. Orn. Cl.* 89: 104–105.

Harrison, J. M. & Harrison, J. G. 1967. The occurrence of Schioler's Dunlin in south-eastern England; a race new to the British Isles. *Bull. Brit. Orn. Cl.* 87: 142–148.

— The occurrence of *Calidris alpina sakhalina* (Vieillot) in Britain. *Bull. Brit. Orn. Cl.* 91: 39–40.

— 1971b. Further notes on the north-eastern Greenland race of the Dunlin from Eire and Kent. *Bull. Brit. Orn. Cl.* 91: 41.

The occurrence of some birds in Bangladesh

by K. Z. Husain & S. U. Sarker

Received 16th October 1971

Introduction

In addition to the work of Baker (1922 – 30), two further works on the avifauna of the Indo-Pakistan subcontinent have since been published, by Ripley (1961) and by Ali & Ripley (1968 – 69). While consulting the literature in the course of a study of a collection of birds recently made in Bangladesh, it was found that information was incomplete or misleading in regard to the range of a number of forms. The shortcoming seems to have arisen because most of the early ornithological investigations were made in the northern and western parts of "British Bengal", and few in the area now forming Bangladesh. In the light of this, one paper has already been published (Husain 1968), and the present one deals with some further species. In due course it is hoped to complete a more comprehensive paper dealing with the collection as a whole.

In addition to the works of the authors mentioned above, that of Rashid (1967) has also been consulted. Our collection, which consists of 744 specimens, is in the Department of Zoology, University of Dacca, Bangladesh. We are very grateful to Mr. C. W. Benson for valuable suggestions, which we have gladly incorporated in the text.

Notes in systematic order

Elanus caeruleus vociferus: Ripley and Ali & Ripley (1, 1968) do not definitely mention Bangladesh as within the range. We have four specimens from Pabna, and have also observed it at Dacca.

Eremopterix grisea: Three specimens, two males with enlarged testes and an immature female, collected in March 1969 at Kuchar Beel, 36 miles north-east of Pabna town, measure in mm as follows:—

	Wing	Tail	Culmen from base
2♂♂	75	46, 48	12,13
♀	71	39	damaged

On the basis of these measurements as well as colour, these specimens belong to *E. grisea* as described by Baker (3, 1926). Ripley does not indicate its occurrence in Bangladesh, and Ali (1968) merely brings it "east to about Calcutta".

Hirundo rustica rustica: According to Baker (3, 1926) and Ripley, the subspecies in Bangladesh is *H. r. tytleri*. A female collected in December 1970, 36 miles north-east of Pabna town, agrees rather with the nominate form, in the colour of the underside and in having the pectoral band almost complete.

Coracina melanoptera sykesi: According to Ripley, this subspecies extends from peninsular India as far north-eastwards as West Bengal. Two males and a female collected at Pabna clearly indicate its extension into Bangladesh.

Pycnonotus jocosus emeria: Baker (1, 1922) mentions "Bengal" as within its range. Ripley mentions "East Pakistan" under the species, but does not specify which subspecies occurs there. In fact it would appear to be *emeria*, judging from eight specimens of both sexes from the districts of Pabna, Rangpur, Faridpur, Dacca and Chittagong.

Culicicapa ceylonensis subsp.: Ripley does not mention this species from Bangladesh. A single specimen collected at Pabna in December 1968 is definitely so attributable. Its rump is quite a bright yellow, in contrast to the back, so that it may belong to the nominate subspecies. But in the absence of further material this must be regarded as tentative.

Terpsiphone paradisi paradisi: Ripley mentions "Bengal" under both *T. p. leucogaster* and *T. p. paradisi*, and "East Pakistan" under *T. p. saturatior*. Three males, in which both the white and the chestnut phases are represented, and a female, collected in June at Pabna, seem to represent the nominate subspecies. Males of both phases were also seen at nests there in that month.

Erithacus svecicus svecicus: Ripley does not mention Bangladesh for this species, though Baker (2, 1924) records *E. s. robustus* from "Eastern Bengal". A male and a female collected at Pabna in February 1969 agree with the description as given by Baker for *E. s. svecicus*.

Phoenicurus ochrurus rufiventris: Baker (2, 1924) mentions among other areas "Bengal" under this subspecies, and according to Ripley it occurs in peninsular India eastward to West Bengal. We have a specimen collected in March 1969 at Pabna, clearly referable to this subspecies.

Saxicola caprata bicolor: According to Baker (2, 1924) the subspecies of "Bengal" is *S. c. bicolor*, and according to Ripley *S. c. burmanica* occurs in Bangladesh. We have a specimen collected in March 1969 at Pabna with much white on the under tail-coverts and extending up to the breast, and therefore referable to *bicolor*. Ripley indicates that the breeding range of this subspecies is from northern India to "northern Bengal".

Saxicola torquata indica: Ripley describes it as wintering in "Bengal" as well as other Indian states, without specifying whether it occurs in Bangladesh as well. Collections made at Pabna in March 1969 show that it does occur. Moreover two of the specimens agree with the description of *S. t. indica*.

Zoothera citrina citrina: Ripley indicates its occurrence in Bangladesh, though it is not clear what is the subspecies. Three specimens collected at Pabna in November 1968 and February/March 1969 are clearly referable to *Z. c. citrina.*

Turdus unicolor: Neither Baker (2, 1924) nor Ripley mentions it for Bangladesh. We have a female collected at Pabna in November 1968. It agrees with the description of this species as given by Baker.

Motacilla flava thunbergi: Two specimens collected at Pabna in December 1968 and October 1969 clearly belong to this subspecies, for which both Baker (3, 1926) and Ripley only give "Bengal". Field observations also show that *thunbergi* is a common winter visitor to Bangladesh.

Ploceus philippinus philippinus: According to Ripley only *P. p. burmanicus* occurs in Bangladesh. However, two males and two females collected at Pabna agree with the description of "*P. passerinus*" in Baker (3, 1926). According to Ripley this is a synonym of *P. p. philippinus*, which extends from peninsular India only into West Bengal.

Estrilda amandava amandava: Although Ali (1968: 33) includes Bangladesh within its range, Ripley does not. We have collected it at Pabna, and it is common in Bangladesh during the winter months.

Summary

On the basis of a recent collection, sixteen forms are recorded from Bangladesh, where the occurrence of none of them had been previously fully authenticated.

References:

Ali, Salim. 1968. *The book of Indian birds.* 8th Ed'n. Bombay: Bombay Nat. Hist. Soc.

Ali, Salim & Ripley, S. D. 1968–69. *Handbook of the birds of India and Pakistan.* Vols. 1–3. Bombay, London, New York: Oxford Univ. Press.

Baker, E. C. S. 1922–30. *The fauna of British India.* Vols. 1–8. 2nd Ed'n. London: Taylor & Francis.

Husain, K. Z. 1968. On the occurrence of some birds in East Pakistan. *J. Asiatic. Soc. Pak.* 12: 1.

Rashid, H. 1967. *Systematic list of the birds of East Pakistan.* Publication No. 20. Dacca: Asiatic Soc. Pak.

Ripley, S. D. 1961. *A synopsis of the birds of India and Pakistan.* Bombay: Bombay Nat. Hist. Soc.

Observations on the birds of the Upper Blue Nile Basin

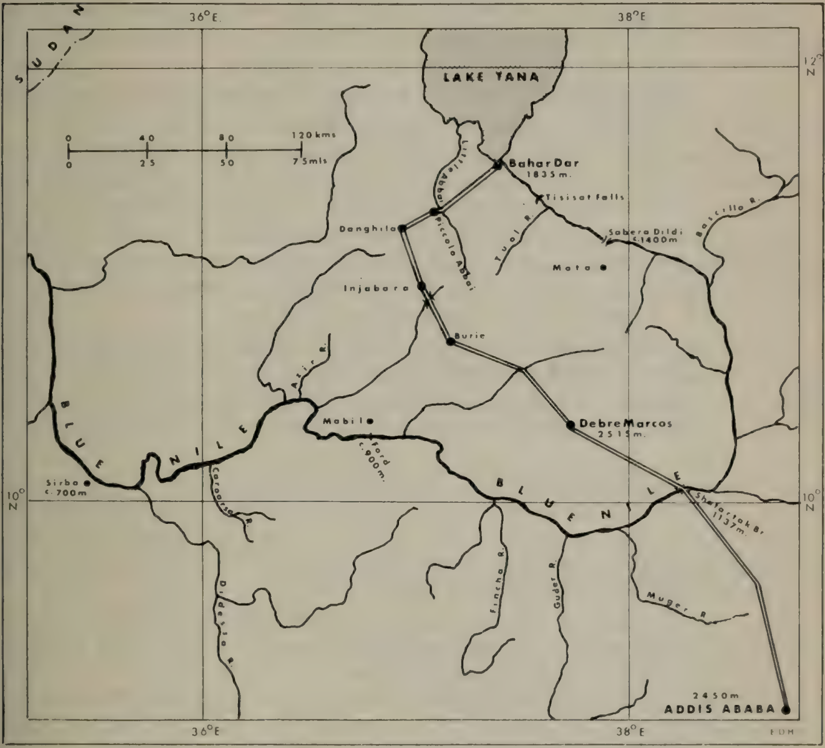
by E. D. H. Johnson

Received 2nd February 1972

In August and September 1968 a British services expedition (the Great Abbai Expedition, leader Capt. John Blashford-Snell, R.E.), with civilian specialists from Britain and Ethiopia, explored the Blue Nile (Great Abbai) by boat, by air and on foot, from the southern tip of Lake Tana (Bahar Dar 11° 36′ N: 37° 25′ E) to the plains west of Sirba (10° 07′ N: 35° 26′ E) (Blashford-Snell 1970, Snailham 1970). My observations during this expedition are here supplemented by notes I made near Piccolo Abbai and Bahar Dar between 26th August and 4th September 1964. Observations on the adjacent plateau will be the subject of a separate paper.

The literature: Heuglin (1868) reached the Blue Nile gorges in his journeys of 1861 – 2 and Degen (Ogilvie-Grant 1904) made a double crossing of the river in 1902, followed by Neumann in 1902 and 1904 (Neumann 1904 – 6). Fuertes & Osgood (1936) crossed in 1927, when Cheesman was attempting to explore the course of the river on foot. It is to Cheesman that we owe the majority of the data which have come out of the gorges (Cheesman 1936 and Cheesman & Sclater 1935 – 36).

The Blue Nile: Leaving Lake Tana at an altitude of 1835 m, the Blue Nile flows for 30 km through a broad, densely cultivated grazed and populated valley, where it is bordered by papyrus swamps, reed beds and evergreen forest and obstructed by numerous rapids and wooded islands. At Tisisat Falls the river drops 50 m into the first of a series of precipitous gorges which characterise its course for the next 500 km. Cliffs up to 150 m in height are relieved at intervals by belts of evergreen forest and occasional shingle banks and reedbeds. Above them, especially in the totally uninhabited reach between Sabera Dildi (1400 m) and Mabil Ford (900 m), slopes and massive terraces, with an almost unbroken moist woodland cover, rise to cloud level and the lower limit of cultivation at about 1500 m. The enclosed and surrounding plateau lies above 2000 m. Below Mabil Ford the terrain becomes progressively less precipitous and scattered riverside maize cultivation increases until it is almost continuous in the plains below the Didessa River confluence (Sirba about 700 m), where the woodland gives place to *Acacia* steppe.


36°E
38°E
12° N
10° N
SUDAN
LAKE TANA
0
40
80
120 kms
0
25
50
75 mls
Bahar Dar
1835 m.
Tisisat Falls
Little Abbai
Piccolo Abbai
Tuol R.
Bascillo R.
Sabera Dildi
c.1400m
Moto
Danghila
Injabara
Burie
Azir R.
Mabil
Ford
c.900 m.
Debre Marcos
2515 m.
Shafartak B.
1137 m.
BLUE NILE
BLUE NILE
Sirba
c.700m
Caroarsa R.
Didessa R.
Fincha R.
Guder R.
Muger R.
2450m
ADDIS ABABA
FDM

The Upper Blue Nile Basin, Ethiopia: the river flows for 500 km through a series of gorges between Tisisat Falls and the Didessa River confluence. The enclosed and surrounding Highland Plateau lies above 2000 m.

Itinerary: 6th – 31st August — Shafartak Bridge, Guder and Fincha River confluences, Mabil Ford, vicinities of Azir, Caroarsa and Didessa River confluences and Sirba (by boat, with stops of 2 – 7 days). 8th – 16th September — Between Bahar Dar and Tuol River (by road and on foot). 17th – 20th September — Sabera Dildi and vicinity (on foot). 21st – 24th September — Sabera Dildi to Shafartak Bridge (by boat).

Systematic list: Selected species are discussed, principally in relation to Cheesman, in Cheesman & Sclater (1935 – 6) and Urban & Brown (1970). Sequence and scientific nomenclature follow White (1960 – 5), and English names are those used by Mackworth-Praed & Grant (1952 – 5) except for certain changes necessitated by White's revised classification.

Pelecanus onocrotalus, White Pelican: Three close in-shore off Bahar Dar, 1st September 1964. "Probably vagrants" (Cheesman); "status uncertain" (U & B).

Ardeola ralloides, Squacco Heron: Several parties of up to 20 in valley between Bahar Dar and Tisisat, 8th – 18th September.

Egretta alba, Great White Egret: Only one seen—on sandbank above the Didessa confluence, 25th August. Not mentioned by Cheesman, but found by Schüz (1967) to be common in the spring of 1966 above Tisisat.

Egretta intermedia, Yellow-billed Egret: Scattered individuals between Shafartak and Mabil Ford, 6th – 14th August; slightly more numerous Mabil Ford to Didessa River, 15th – 25th August, including two immatures; common in flocks of up to 100 in meadows near Tisisat.

Egretta garzetta schistacea, Reef Heron: Two "intermediate-phase" birds, several km apart to the east of the Didessa River confluence, 25th August. Both had pale grey heads, yellow bills and dirty-white-to-greyish necks shading to pale grey underparts. One had scattered traces of yellowish white on the neck.

Ardea melanocephala, Black-headed Heron: Regularly feeding along valley above Tisisat, from the well-known Lake Tana colonies. Busy adding sticks to rather more than 30 nests in the colony in trees surrounding the *tukul* church at Bahar Dar, 8th – 18th September (same number of nests and identical activity first week September 1964).

Ardea goliath, Goliath Heron: Scattered individuals all along river, especially at main confluences; frequent, singly, above Tisisat. Not recorded by Cheesman further west than Mabil Ford.

Anastomus lamelligerus, Openbill: One near the Muger River confluence, 7th August. "Uncommon" (U & B).

Ibis ibis, Wood Ibis: Scattered individuals and small groups on sand-banks in the broader reaches below Shafartak. Not mentioned Cheesman.

Nettapus auritus, Pygmy Goose: Pair in harbour, Bahar Dar, 30th August to 1st September 1964. Not mentioned Cheesman and recent authors; "uncommon to frequent (below 2000 ft)" (U & B).

Gypaetus barbatus, Lammergeier: Two or more usually in air above escarpment north of Shafartak Bridge, 1964 and 1968. Differences in age and coloration indicated several individuals. Not seen elsewhere. "In Blue Nile ravines" (Cheesman); "one or two at Tisisat" (Schüz 1967).

Accipiter minullus, Little Sparrow Hawk: Adult and immature hunting weavers from cover near Azir River confluence, 21st August; two adults near Bahar Dar and one west of Tisisat, 9th and 10th September, respectively. "Uncommon" (U & B); recorded L. Tana (Ogilvie-Grant 1904 and Schüz 1967).

Hieraaetus spilogaster, African Hawk Eagle: One, Fincha River confluence, 21st August. Not mentioned Cheesman and other authors.

Aquila verreauxii, Verreaux's Eagle: Three pairs between Fincha River and Mabil Ford, 7th – 13th August; single bird near Caroarsa River 23rd August. Not mentioned Cheesman and other authors; "uncommon" (U & B).

Aquila wahlbergi, Wahlberg's Eagle: One over *Acacia* steppe, Sirba, 30th August. Not mentioned Cheesman and other authors; "occurrence in Ethiopia uncertain" (U & B). Three records on adjacent plateau will be discussed elsewhere.

Haliaeetus vocifer, Fish Eagle: Evenly distributed every km or so along the whole of the Blue Nile between Tisisat and Sirba, more numerous between the Azir and Didessa Rivers; abundant above Tisisat. Seen singly until 22nd August, after which usually paired; displaying regularly from 7th September (Schüz 1968 notes copulation 9th October 1967 vic. Bahar Dar).

Francolinus sephaena, Kirk's Francolin: One of two identical, freshly-shot francolins at Azir River mouth, 21st August, showed, although partially plucked on back, whitish eye-stripe meeting on nape which, with chocolate streaked breast, flanks and belly indicated *F. s. spilogaster*—a spurred male. Urban & Brown consider range and status of *F. sephaena* as unclear, *spilogaster* being recorded only from S and SE Ethiopia. The only francolin seen—despite regular shooting for the pot, and constant search by author and others.

Columba guinea, Speckled Pigeon: Common in open savannah bordering cultivation above Tisisat, below which only birds seen were a pair with eggs in one of the piers of the Portuguese Bridge (Sabera Dildi) 17th – 19th September.

Streptopelia lugens, Pink-breasted Dove: Not seen at lower levels (as suggested possible during rains by U & B), except for one at Azir River (below 1000 m) 21st August.

Streptopelia capicola, Ring-necked Dove: Seen only in small numbers, above Blue Nile cloud-level near Mabil. Not recorded by Cheesman and others; "status uncertain" (U & B).

Turtur afer and *T. chalcospilos*, Blue-spotted and Emerald-spotted Wood Doves: Found only between Guder River and Mabil Ford. Both quite common, judging from amount of song. Only *afer* identified in riverine forest near Guder River and only *chalcospilos* in drier, more open woodland near Mabil. *Afer* first identified when caught in mistnet (red bill with yellow tip—photograph); *chalcospilos* suspected and identification confirmed (green spots, blackish bill) by close observation of singing birds, two songs being readily differentiated. *T. abyssinicus* not found. "Exact ecological relationships of these three small wood doves are not defined" (U & B).

Poicephalus flavifrons, Yellow-fronted Parrot: Found in three places between Guder and Didessa Rivers, where there was local abundance of fruiting vines supported by tall trees at edge of riverine forest. Not mentioned by Cheesman and other authors.

Corythaixoides leucogaster, White-bellied Go-away Bird: Found occasionally in drier bush between Azir River and Sirba, but by no means restricted to this habitat as suggested by Mackworth-Praed & Grant (1952 – 5). Common in riverine forest and *Acacias* between Tisisat and Bahar Dar—habitats cited by U & B. Not recorded by Cheesman and other authors.

Centropus superciliosus, White-browed Coucal: Two small parties aggressively chasing through long grass in moist woodland above Guder River confluence, 8th and 9th August. Sounds noted were an occasional squawk like Azure-winged Magpie *Cyanopica cyanus* and a partridge-like bubbling. Not recorded by Cheesman and other authors.

Otus scops, Scops Owl: Several, presumed *O. s. senegalensis*, heard calling in trees around Piccolo Abbai, 28th August to 4th September 1964. Call, recorded there and near Rift Valley lakes two weeks earlier, is appreciably more disyllabic than that recorded in Europe. Cheesman saw only one (which he regarded as a palearctic migrant) in nine years, and heard none; he believed it to be silent in Ethiopia.

Scotopelia peli, Fishing Owl: A pair perched together on branch overhanging Blue Nile below Bascillo confluence 21st September. Not mentioned by Cheesman and other authors. Urban & Brown (1971) do not include the species in W Ethiopia, although Zedlitz (1908) obtained the type of *S. salvago-raggii* (syn. of *peli*) on the middle Taccazze River.

Phoeniculus purpureus, Green Wood Hoopoe: Small parties, including immatures, between Guder and Azir Rivers, 8th to 22nd August. Pair feeding one newly fledged young 10th August.

Phoeniculus minor, Abyssinian Scimitar-bill: One in bush above Mabil Ford 15th August. (Field notes: " . . . all blue-black, bill yellowish-orange . . ."). Not mentioned by Cheesman; not placed in W Ethiopia by Urban & Brown, although included there by Mackworth-Praed & Grant (1952 – 5) and White (1965).

Dendropicos abyssinicus, Golden-backed Woodpecker: A pair in close company, frequenting bare branches of broad-leafed trees in a small pocket of savannah (one of few localities with *Euphorbias*), near Azir River confluence 21st August.

Riparia paludicola, African Sand Martin: A feature of almost every rapid and cataract on Blue Nile between Shafartak and Sirba and in valley above Tisisat; feeding on large and small flies which always accompanied broken water. Numerous small breeding colonies 6th to 29th August, where lesser tributaries cut through deep deposits of sand and mud to join river. Not found other than in direct association with main river. Seen over Small Abbai at Piccolo Abbai 28th August 1964, in small parties. Not mentioned by Cheesman, but recorded at Bahar Dar in February by Moltoni (1940).

Hirundo smithii, Wire-tailed Swallow: Shared feeding places with *R. paludicola* and was equally common, except upstream from Tisisat where it was somewhat scarcer. Always associated with swift and broken water. Parties contained up to 30% immatures.

Hirundo fuligula, African Rock Martin: Odd small groups apparently nesting in vertical crags above gorges between Shafartak and Fincha River, 6th to 11th August. Pair building under arch of Portuguese Bridge (Sabera Dildi), 17th to 18th September. Cheesman's nesting dates, on plateau, are January and February.

Motacilla clara, Mountain Wagtail and *Motacilla alba*, African Pied Wagtail: *M. a. vidua* usually paired and widely scattered along Blue Nile from Bahar Dar to Sirba, usually near broad rapids. A few *M. clara* were found in the narrow, steep and rugged torrents of tributaries, in the gorges between Shafartak and Fincha River. Thus the habitat of the two species was not identical.

Oriolus auratus, African Golden Oriole: Three near Mabil Ford 15th – 16th August; common in moist woodland around Didessa River confluence 26th – 29th August. Constantly in song, thus eliminating confusion with *O. oriolus* which was not recorded. "Distribution in Ethiopia not well understood" (U & B).

Pycnonotus barbatus, Bulbul: White-vented form, presumably *P. b. schoanus*, common in riverine forest of Blue Nile from L. Tana at least as far down stream as Sabera Dildi. Replaced between Shafartak Bridge and Fincha River by scarcer, deep yellow-vented form. Again white-vented and common downstream from Azir River, especially around and below the Didessa confluence. Not recorded by other authors downstream from Bahar Dar.

No appreciable difference in habitat preference was noted between the two forms. Possibly the yellow-vented birds tended to prefer the denser parts of the riverine forest and the white-vented the more open woodland.

Cercomela familiaris, Red-tailed Chat: Twelve scattered individuals, found only in a few craggy places below 1500 m, immediately above the riverine forest between Shafartak and the Fincha River. Close and detailed examination eliminated *C. dubia*. Not mentioned by Cheesman and others. "Habitat not fully determined in Ethiopia" (U & B).

Monticola solitaria, Blue Rock Thrush: Two, possibly three, males in a rugged boulder-strewn location below the ramp at the top of the southern side of the Blue Nile Gorge, above Shafartak, 2nd August. "A rare passage migrant" (Cheesman); "abundance and distribution poorly known" (U & B).

Turdoides leucocephala, White-headed Babbler: Not uncommon in isolated bushes at edge of derelict cultivation between Mabil Ford and Azir River, 15th to 22nd August. Not recorded by Cheesman and other authors.

Turdoides leucopygius, White-rumped Babbler: Six near Caroarsa River confluence, c. 900 m, 24th August. "Not seen below 1250 m" (Cheesman).

Serinus mozambicus, Yellow-fronted Canary: About 10 in flocks of weavers and finches in patch of dry, reed-fringed savannah near Azir River confluence, c. 850 m, 21st Aug. Recorded by Cheesman between 1500 m and 1800 m east of Mabil; "apparently occurs below 1800 m . . . (Ash in prep.)" (U & B).

Serinus striolatus, Streaky Seed-Eater: A few on the Blue Nile, near Fincha and Azir River confluences, at 1000 m and 850 m respectively. "Usually found above 1500 m, more abundant above 2100 m". (U & B).

Euplectes albonotatus, White-winged Widow Bird: Two pairs on level, grassy stretch of Blue Nile bank near Muger River confluence, 7th August, and two males at Guder River mouth 10th August. Not mentioned by Cheesman; Hall & Moreau (1970) and Urban & Brown (1971) place it in W Highlands, but to south of Addis Ababa.

Euplectes ardens, Red-collared Widow Bird: Numerous in the maize fields around Mabil (1200 m) 17th – 18th August. "Uncommon below 1500 m, usually above 1800 m" (U & B).

Euplectes hordeaceus, Black-winged Red Bishop: Common in semi-derelict riverside cultivation and reed beds between Mabil Ford and Sirba, 14th – 29th August; particularly numerous below Didessa confluence. Large flocks; few females seen. Not mentioned Cheesman and other authors. Evidently extension of W Ethiopian population indicated by Hall & Moreau (1970) and Urban & Brown (1971).

Plocepasser superciliosus, Chestnut-crowned Sparrow Weaver: Two in open woodland below Mabil Ford (c. 900 m) 17th August. Cheesman recorded it between 1700 m and 2100 m; "not well known, apparently occurs below 2000 m in open woodland" (U & B).

Pytelia phoenicoptera, Red-winged Pytelia: In small parties between Mabil Ford and Didessa confluence, 14th – 27th August. In reeds and grasses at water's edge. Cheesman saw only one—downstream from Tisisat.

The following species, observed between Tisisat Falls and Sirba, call for no comment in the present context:—

Ardea cinerea, *A. purpurea*, *Scopus umbretta*, *Ciconia ciconia* (PM), *Bostrychia carunculata*, *Alopochen aegyptiaca*, *Plectropterus gambensis*, *Anas querquedula* (PM), *Aegypius tracheliotus*, *Trigonoceps occipitalis*, *Gyps ruppellii*, *G. bengalensis*, *Neophron percnopterus*, *Terathopius ecaudatus*, *Circaetus pectoralis*, *Accipiter badius*, *Lophaetus occipitalis*, *Polemaetus bellicosus*, *Falco ardosiaceus*, *F. alopex*, *Ptilopachus petrosus*, *Numida meleagris*, *Vanellus spinosus*, *Tringa ochropus*, *Tringa hypoleucos*, *Pluvianus aegvptius*, *Sterna leucoptera*, *Streptopelia semitorquata*, *Tauraco leucotis*, *Centropus monachus*, *Glaucidium perlatum*, *Apus niansae*, *A. affinis*, *Colius striatus*, *Apoloderma narina*, *Ceryle maxima*, *C. rudis*, *Alcedo cristata*, *Ceyx picta*, *Halcyon senegalensis*, *Merops apiaster* (PM), *M. pusillus*, *M. lafresnayii*, *Upupa epops*, *Tockus nasutus*, *T. erythrorhynchus*, *Bucorvus abyssinicus*, *Lybius guifsobalito*, *Indicator indicator*, *Dendropicos fuscescens*, *Hirundo rustica* (PM), *H. senegalensis*, *H. daurica*, *H. abyssinica*, *Psalidoprocne pristoptera*, *Laniarius ferrugineus*, *Lanius collurio* (PM), *L. collaris*, *Oriolus monacha*, *Dicrurus adsimilis*, *Onychognathus morio*, *Myrmecocichla cinnamomeiventris*, *Cisticola troglodytes*, *Prinia subflava*, *Camaroptera brachyura*, *Melaenornis edolioides*, *Terpsiphone viridis*, *Nectarinia senegalensis*, *Zosterops senegalensis/abyssinica*, *Emberiza tahapisi*, *Ploceus cucullatus*, *Euplectes orix*, *Passer griseus*, *Vidua macroura*, *V. chalybeata*, *Estrilda bengala*, *E. larvata*, *Lagonosticta senegala*, *Amandava subflava*, *Lonchura cucullata*.
PM — Palearctic Migrant.

Summary: The Upper Blue Nile basin was visited during August and September 1968. Geography and topography are briefly mentioned. Selected species are discussed in relation to past literature—notably Cheesman & Sclater (1935 – 6) and Urban & Brown (1970); other species are listed for reference.

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References:

Blashford-Snell, J. N. 1970. Conquest of the Blue Nile. *Geogr. Journ.* 136 (I): 42–60.

Cheesman, R. E. 1936. *Lake Tana and the Blue Nile*. London: Macmillan.

Cheesman, R. E. & Sclater, W. L. 1935–6. On a collection of birds from north-west Ethiopia. *Ibis* 84: 151–191, 297–329, 594–622. 85: 163–199.

Fuertes, L. A. & Osgood, W. H. 1936 *Artist and Naturalist in Ethiopia*. New York: Doubleday, Doran & Co.

Hall, B. P. & Moreau, R. E. 1970. *An atlas of speciatiom in African passerine birds*. London: British Museum (Natural History).

Heuglin, M. Th. von. 1868. *Reise nach Abessinien*, 1861 *und* 1862. Jena.

Mackworth-Praed, C. W. & Grant, C. H. B. 1952–5. *African handbook of birds*, Series I. London: Longmans.

Moltoni, 1940. *Missione di studio al Lago Tana*, Vol. 4. Rome: Reale Accademia d'Italia.

Neumann, O. 1904–6. Vögel von Shoa und Süd Athiopien. *J. Orn.* 52: 321–410. 53: 184–243, 335–360. 54: 229–300.

Ogilvie-Grant, W. R. 1904. On the birds collected during a recent expedition through Somali-Land and Abyssinia to Lake Tsana. With field notes by the collector Mr. E. Degen. Ibis (8) 4: 250–280.

Schüz, E. 1967. Ornithologische April-Besuch in Athiopien, besonders am Tanasee. *Stuttg. Beitr. zur Naturkunde* No. 171: 21pp.

— 1968. Ornithologische Oktober-Besuch am Tana-See (und bei Addis Abeba), Athiopien. *Stuttg. Beitr. zur Naturkunde* No. 189: 43pp.

Snailham, R. 1970. *The Blue Nile Revealed.* London: Chatto & Windus.
Urban, E. K. & Brown, L. H. 1970. *A checklist of the birds of Ethiopia.* Addis Ababa: Haile Sellassie I University Press.
White, C. M. N. 1960. A check list of the Ethiopian Muscicapidae (Sylviinae). Part I. *Occasional papers of the National Museums of Southern Rhodesia.* No. 24B: 339–430.
White, C. M. N. 1962a. *A revised check list of African broadbills etc.* Lusaka: Government Printer.
— 1962b. A check list of the Ethiopian Muscicapidae (Sylviinae). Part II. *Occasional Papers of the National Museums of Southern Rhodesia.* No. 26B: 653–738.
— 1962C. *A revised check list of African shrikes etc.* Lusaka: Government Printer.
— 1963. *A revised check list of African flycatchers etc.* Lusaka: Government Printer.
— 1965. *A revised check list of African non-passerine birds.* Lusaka: Government Printer.
Zedlitz, O. 1908. *Scotopelia salvago-raggii* Zedlitz. *Orn. Monatsb.* 16: 172.
[The cost of reproduction of the map in the above paper is to be borne by the author—Ed.]

Bird records from Surinam

by F. Haverschmidt

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This paper contains a number of bird records collected by me in Surinam too late to include in my "Birds of Surinam" (Haverschmidt 1968) and some data assembled during visits I made to that country in 1969, 1970 and 1971. The breeding records give an extension to the breeding seasons as mentioned in my book.

Podiceps dominicus, Least Grebe: On 29th February 1968 I collected a male (weight 144 g) in a sandpit near Paramaribo. This is the second record for Surinam.

Sula leucogaster, Brown Booby: I received a female (weight 985 g) that had alighted on a trawler fishing at sea near the coast on 13th September 1967. This is the fourth record for Surinam.

Oxyura dominica, Masked Duck: This duck is not so rare in the coastal area as was supposed. A fair number stayed from November 1967 well into 1968 on a freshwater lagoon on the sugar estate Marienburg (Commewijne Dist.) The birds behaved extremely secretively, hiding amidst water vegetation and lying rather deep in the water when observed. Weights of nine males 369 – 449 (406) g, of six females 298 – 393 (339) g.

Falco peregrinus, Peregrine: An adult male collected by me on 21st December 1946 on the lagoons near Nickerie, now preserved in the American Museum of Natural History, proved to belong to the recently described race *tundrius* (White 1968). This race is in habits and morphology the New World counterpart of the palaearctic *calidus*. It is smaller and more pale bluish above than *anatum*, especially noticeable on the crown and rump of the males. It is highly migratory and breeds in the tundra from about 77° N south to the tree line in North America and Greenland.

An immature female collected by me at Zanderij on 12th March 1950 cannot be determined as to its race, as is to be expected in this plumage. The race *cassini* from southernmost South America has not been established with certainty up till now in Surinam. The subadult female shot at Kwatta near Paramaribo on 19th April 1922, and now preserved in the Museum of Comparative Zoology at Cambridge, Mass., was attributed by Penard (1927) to *cassini*, but Hellmayr & Conover (1949) considered it an aberrant specimen of *anatum*. The date seems late for this race. At my request Dr. R. A. Paynter re-examined the specimen once more and informed me that when seen from above it would immediately be called *cassini* and when viewed from below an example of *anatum*! He concluded that the specimen can only be considered as indeterminable as to its race. The second specimen from Surinam attributed to *cassini* by Penard (*loc. cit.*), but only on account of its wing-length, collected more than a century ago and formerly preserved in the Stuttgart Museum, is unfortunately lost (E. Schüz *in litt.*).

The much diminished Peregrine still regularly occurs in migration in Surinam, favouring the sea coast, the tributaries of the great rivers and the lagoons near the coast where it hunts wildfowl and shore birds, at least up till 1965. Apart from the records mentioned earlier (Haverschmidt 1954) I regularly observed it in later years on a lagoon on the Maasstroom plantation (Commewijne Dist.) where a dead tree in the middle of the lagoon was used as a hunting post to chase shorebirds. On 27th October 1963, 24th November 1963 and 22nd February 1964 there were on each occasion two birds; on 8th November and 20th December 1964 a single bird; on 7th November 1965 one adult; and on 5th December 1965 an immature bird. Thereafter I was unable to visit this locality any more. In December 1960 one lived for a considerable time on the wreck of the "Goslar", a scuttled ship in the middle of the Surinam River just opposite Paramaribo, where it hunted terns and gulls which used the wreck for resting and roosting.

Aramides cajanea, Grey-necked Woodrail: A nest with four eggs was found on 14th July 1967 at Marienburg (Commewijne Dist.). Measurements 47 × 32·4 (weight 25·1), 45 × 33·7 (26·5), 48·4 × 32·9 (26·8), 49·5 × 32·9 mm (27·1 g).

Neocrex erythrops, Paint-billed Crake: On 26th June 1967 I found a specimen apparently hit by a car on the road near my home near Paramaribo, the fourth record for Surinam.

Gallinula chloropus, Common Gallinule: This species is not so rare as supposed and proved rather common in the overgrown lagoon at Marienburg (Commewijne Dist.) where the Masked Duck also was found. The gallinules were extremely shy immediately swimming into cover as soon as observed. Weights of six males 275 – 380 (311) g, one female 339 g.

Jacana jacana, Wattled Jacana: On 16th October 1969 I found a nest with four eggs at Paramaribo. Weights 9·1, 9·4, 9·5, and 12·5 g.

Columba speciosa, Scaled Pigeon: On 8th January 1971 I found a nest in thick savanna bush at Zanderij. As usual with this species, it contained only one egg, heavily incubated.

Zenaida auriculata, Eared Dove: On 23rd July 1967 I collected a male (weight 110 g) at Zanderij, and I received two specimens shot at Marienburg on 14th July 1967 (male, 100 g) and 6th August 1967 (female, 90 g). There are now five records of this obvious migrant in Surinam, all within the period 4th July – 6th August.

Columbina passerina, Common Ground Dove: On 22nd January 1968 I found a nest with two eggs, as usual on the ground, at Zanderij. The date falls within the short rainy season, but dry season laying is normal.

Leptotila verreauxi, White-tipped Dove: On 12th and 21st December 1967 and on 20th February 1968 I found nests with two eggs at Paramaribo. Measurements of two of these clutches: 25·7 × 19·6, 26·9 × 20·5 and 27·6 × 20·1, 27·6 × 20·5 mm.

Leptotila rufaxilla, Grey-fronted Dove: On 28th January 1968 I found a nest with two eggs at Paramaribo. Measurements 28·7 × 21·1, 28·4 × 21·4 mm.

Pionites melanocephala, Black-headed Parrot: On 9th October and 13th November 1969 I observed two different pairs nesting in holes of very big and tall trees at the edge of the forest at Phedra.

Nyctidromus albicollis, Pauraque: On 5th November 1967 I found a nest with a single egg as usual, on the forest floor, near Phedra. Measurements 30·8 × 21 mm.

Caprimulgus maculicaudus, Spot-tailed Nightjar: A "nest" with two eggs was found on burnt-over land at Marienburg on 2nd October 1967. Measurements 23·4 × 18·1, 23·1 × 18·1 mm.

Caprimulgus nigrescens, Blackish Nightjar: On 3rd September 1967 I found a "nest" with the usual single egg on a road side near Phedra (see Plate), at the same spot where I also found a nest with one egg on 18th April 1965. The egg lay only 10 cm from the track of a tractor that had trailed timber on the road side a short time previously. Measurements 25·2 × 18·8 mm.

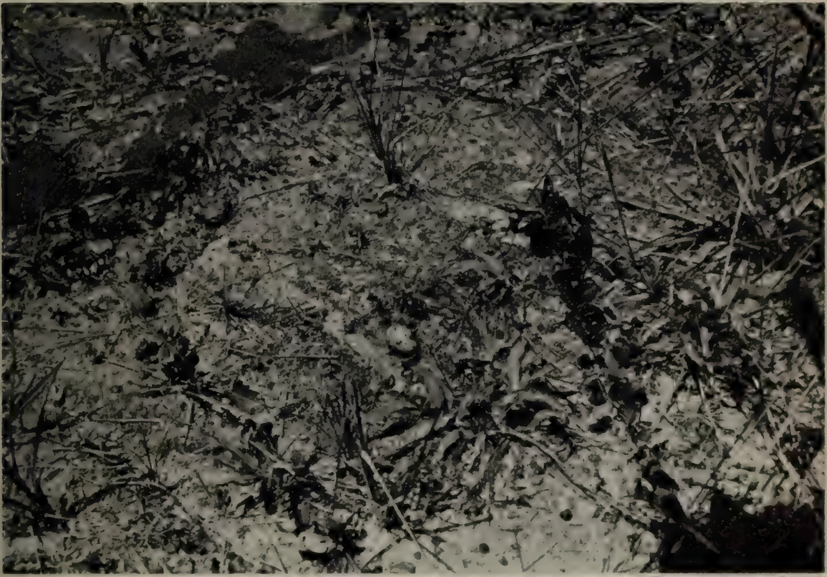

Plate "Nest" and egg of *Caprimulgus nigrescens*. Phedra, Surinam, 3rd September 1967.

Calliphlox amethystina, Amethyst Woodstar: There was only one previous record of this small hummingbird. On 19th September 1967 I collected a male at Zanderij and on 26th November 1967 and 10th December 1967 a male and female near Phedra. Weights of two males 2·5 and 2·8 g, one female 2·7 g.

Leuconerpes candidus, White Woodpecker: The collecting of a specimen in the mangroves near Matapica (Commewijne Dist.) by Mees (1968) on 10th January 1966 was quite an interesting discovery. However, I had already observed two specimens of this striking black-and-white species, which was extremely noisy, at the same locality on 30th November 1947. As I was unable to collect a specimen I did not mention this record earlier.

Melanerpes rubricapillus, Red-crowned Woodpecker: Certainly not rare but apparently wholly confined to the mangroves near the coast line. I have received a male (49 g) and a female (43 g) shot at Oranjekreek (Marowijne Dist.) on 12th November 1967.

Muscivora tyrannus, Fork-tailed Flycatcher: The extreme dates of the typical race of this common migrant from the south as established from collected specimens are: earliest 19th March and latest 21st October. The specimen collected near Paramaribo on 29th July 1958, and reported in my book as belonging to the race *monachus*, proved to have been wrongly identified at the Leiden Museum, and is of the typical race. The race *monachus* has been collected in Surinam only on 24th November and 23rd January, a time of the year the nominate race has not been established as occurring in Surinam up till now.

Tyrannopsis luteiventris, Dusky-chested Flycatcher: Apart from the three specimens already mentioned in my book, I collected a female (weight 14·6 g) at Phedra on 23rd October 1969.

Myiarchus swainsoni, Swainson's Flycatcher: Apart from the specimens already mentioned in my book, there are in my collection in the Leiden Museum three more specimens of this difficult species which were identified by Dr. G. F. Mees: Leonsberg, male, 2nd October 1958 and female, 12th September 1967, and Paramaribo, male, 28th July 1967. According to Dr. Wesley E. Lanyon, who examined my five specimens, all belong to the race *amazonus* described by Zimmer from Faro, Brazil, and not to the nominate race. Whether *swainsoni* breeds in Surinam remains to be established. I am rather certain that the three birds detailed above were migrants. Weights of four males 22 – 29 (25) g, one female 28 g.

Elaenia parvirostris, Small-billed Elaenia: On 28th July 1967 I collected a female near Paramaribo. This is the third record of this obvious migrant from the south, the records being in the period 17th July to 23rd August. Weights of two males 12·6, 16 g, one female 15 g.

Pipromorpha oleaginea, Ochre-billed Pipromorpha and *Pipromorpha macconnelli*, MacConnell's Pipromorpha: These two species are extremely similar, *oleaginae* having a double wingbar, while *macconnelli* has plain wings and without the buffy bars to the remiges. The difference is so small indeed that one sometimes doubts whether they are two different species at all. However, I have never found intermediates. It seems that the two species are about equally distributed in Surinam, and as I have now collected 11 specimens of *oleaginea* and 12 of *macconnelli*, to detail them seems superfluous. Yet Meyer de Schauensee (1966, 1970) persistently omits Surinam from the range of *macconnelli*. Both species live in the same habitat: dark forests and forest-edges and I have collected both of them on the same day in the same *Guarea guara* tree where they fed on its fruits (Haverschmidt 1971). Moreover, the nest of *macconnelli* is identical with that of *oleaginea*. On 3rd January 1971 I collected a female of *macconnelli* at its nest in the forest near Phedra. It had an enlarged ovary. The nest was a pendent structure of plant fibres with a side entrance attached to a cord-like aerial root at about 1·50 m above a forest stream, similar to the nests of *oleaginea* figured by Skutch (1960). Unhappily the nest was still empty. Weights of *oleaginea:* five males 11 – 13 (11·6) g, six females 9 – 11 (10·5) g. Of *macconnelli:* eight males 10 – 13 (11·9) g, four females 11 – 11·1 g.

Progne chalybea, Grey-breasted Martin: The southern race *domestica* (Eisenmann & Haverschmidt 1970) proves to be a regular and numerous migrant from the south. In August 1971 I found many flocks in dead trees in the neighbourhood of Paramaribo and on 4th August I collected a male (weight 51 g) and a female (56·4 g).

Notiochelidon cyanoleuca, Blue-and-white Swallow: The race *patagonica* is another numerous migrant from the south. I received a number of specimens collected at Marienburg on 1st May and 3rd June 1967 where it was numerous at that time. Its extreme dates as far as now known are 1st May until 12th October.

Icterus cayanensis, Epaulet Oriole: There are only a few records. On 8th October 1967 I collected a male (weight 42 g) at Phedra.

Euphonia plumbea, Plumbeous Euphonia: This species is certainly not so rare as is generally supposed. I collected two more specimens at Phedra on 6th and 13th August 1967. They were feeding in the company of several *E. violacea* and *E. minuta* on berries in low shrubbery. I have now collected seven specimens in Surinam. Weights of four males 9 – 9·5 (9.2) g, of three females 8 – 9 (8·5) g.

Euphonia chrysopasta, Golden-bellied Euphonia: Certainly not rare, as I collected five more specimens at Phedra: two males and two females on 18th February 1968 and a male on 23rd November 1969. They were feeding on berries in low shrubbery in the company of *E. violacea* and *E. minuta*. A critical examination of this series with the type of *nitida* described from only a single specimen from Surinam by Penard (1923) would be valuable. I have now collected nine specimens in Surinam; weights of six males 11·1 – 13·3 (12·1) g, of three females 12 – 12·7 (12·3) g.

Tachyphonus phoenicius, Red-shouldered Tanager: On 3rd December 1967 I found a nest with two eggs on the ground at the foot of a low bush in savanna near Zanderij, in the same situation as described in my book. Measurements of eggs 22·3 × 16·4, 22·9 × 16·6 mm. Both weighed 3·2 g.

References:

Eisenmann, E. & Haverschmidt, F. 1970. Northward migration to Surinam of South American Martins (*Progne*). *Condor* 72: 368–369.

Haverschmidt, F. 1954. New bird records from Surinam. *Ardea* 42: 330.

— 1968. *Birds of Surinam*. Edinburgh: Oliver & Boyd.

— 1971. Large number of birds exploiting a fruit tree in Surinam. *Wilson Bull.* 83: 104–105.

Hellmayr, C. E. & Conover, B. 1949. *Catalogue of birds of the Americas*. Pt. 1, nr. 4. Chicago: Field Museum of Natural History 13: 299.

Mees, G. F. 1968. Enige voor de Avifauna van Suriname nieuwe vogelsoorten. *Gerfaut* 58: 104.

Meyer de Schauensee, R. 1966. *The species of birds of South America and their distribution.* Narberth, Penn.: Livingston.

— 1970. *A guide to the birds of South America*. Wynnewood, Penn.: Livingston.

Penard, Th. E. 1923. A new Tanager from Surinam. *Occ. Pap. Boston Soc. Nat. Hist.* 5: 63.

— 1927. The Duck Hawk in Surinam. *Auk* 44: 419–420.

Skutch, A. F. 1960. Life histories of Central American Birds. Vol. II. *Cooper Orn. Soc. Pacific Coast Avifauna* 34: 566.

White, C. M. 1968. Diagnosis and relationships of the North American tundra-inhabiting Peregrine Falcons. *Auk* 85: 179–191.

[The cost of reproduction of the plate in the above paper is to be borne by the author—Ed.]

Generic limits in old world Apodidae and Hirundinidae

by R. K. Brooke

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The Apodidae and the Hirundinidae are the principal avian diurnal predators of aerial plankton. The present paper sets out how they should be classified at the generic level and examines certain proposals in this light.

Sharpe & Wyatt (1894: xii) said "The swallows are represented by twelve genera, which might almost be characterized by the peculiarities of their nesting habits". Mayr & Bond (1943) drew attention to the importance of correlating colour patterns and nest types in the Hirundinidae, Medway (1966) similarly correlated colour patterns and the ability to echo locate in the Collocaliini (Apodidae). Lack (1956b) brought in clutch size as well in the Apodidae. Orr (1963) in discussing parts of the Apodidae emphasized that such ecological specialists were restricted in their possibilities for morphological change consonant with retaining their ecological functions and that therefore small differences were of greater importance in considering genera and species than in more plastic groups. Orr's (*op. cit.*) remarks apply equally to the Hirundinidae.

Brooke (1970) tried to apply these principles in his revision of the Apodidae. Therein he recognized *Tachymarptis* Roberts 1922 as a subgenus of *Apus* Scopoli 1777 and included in it *melba* L., the type species, and *aequatorialis* von Müller since he agreed with Lack (1956a) that they were closely related. On *Tachymarptis* he wrote that it:—

> "is characterized by its absolutely greater size, e.g., culmen 12 – 14 mm. as opposed to 5 – 10 mm. in *Apus*, weight over 80 gm. as opposed to less than 60 gm. in *Apus*, which indicates that *Tachymarptis* exploits a different ecological niche from that of *Apus*. In addition, the nest is usually placed in a vertical crack, not on or under a pre-existing ledge".

Brooke (1964) showed that newly hatched nestlings of *Apus apus*, *A. caffer* and *A. affinis* were hatched with zygodactylous feet and that this condition lasts for the best part of the first week of life. I recently examined two naked, blind nestlings, probably three and five days old of *Tachymarptis aequatorialis*. The foot was completely pamprodactyl with no trace of the zygodactyl condition found in *Apus* species of this age. The difference in foot formula at so early a stage in development strongly suggests a deep seated difference in the genetic systems of the two groups. As for *T. melba*, Zehnter (1890) pointed out long ago that the twelve day old embryo had a pamprodactyl foot.

It is widely accepted that Mallophaga or Phtheiraptera sometimes give a measure of evolutionary relationship. Ledger (1971) has shown that the Mallophagan *Dennyus hirundinis* (L. 1761) is widespread in *Apus* sensu stricto having examined material collected on *A. apus*, *affinis*, *nipalensis* (if this is to be regarded as specifically distinct from *affinis* as suggested in Brooke 1971), *caffer*, *horus*, *bradfieldi*, *barbatus*, *pallidus*, *alexandri*, *acuticauda* and *pacificus*. He points out that *D. cypsiurus* Thomson 1948 found on both *Cypsiurus parvus* and *batasiensis* is closely related morphologically to *D. hirundinis* but that *D. vonarxi* Büttiker 1954 from *T. melba* and *D. aequatorialis* Ledger 1968 from *T. aequatorialis* are morphologically closely related to each other but not to *D. hirundinis* and *D. cypsiurus*. He believes that *Tachymarptis* and *Apus* stocks separated before *Apus* and *Cypsiurus* stocks did. This may well be so. In any case it argues strongly for recognizing *Tachymariptis* Roberts 1922 as a full genus in the Apodini of the Apodidae and I propose accordingly.

Schoutedenapus De Roo 1968 is of uncertain position in the Apodidae (Brooke 1970). Ledger (1971) points out that the one known *Dennyus* Neumann 1906 from it is a member of the subgenus *Ctenodennyus* Ewing 1930 also found on *Nephoecetes niger* and some Collocaliini. This does not assist the placing of *Schoutedenapus* which Brooke (1970) suggested had affinities with both the Cypseloidinae in which is placed *Nephoecetes* Baird 1858 and the Collocaliini.

Brooke (1970) recognized three subgenera in *Collocalia* Gray 1840 (*Collocalia* for the glossy species who cannot echo locate, *Aerodramus* Oberholser 1906 for the dull species who echo locate and *Hydrochous* Brooke 1970 for the large, dull *gigas* which cannot echo locate. He also pointed out that *gigas* is absolutely larger than any other member of the Collacaliini and that it alone among all the many fork-tailed swifts has more emarginate outer rectrices in juveniles than in adults. Since then Becking (1971) has shown that the nest of *gigas* contains saliva which does not bind the material because it is kept constantly wet by the spray from the adjacent waterfall but it does solidify and bind the material when a nest is collected and stored in a dry place. So *gigas* is not an old world representative of the Cypseloidinae who lack binding saliva. Ledger (1970) has provided a preliminary discussion of the *Dennyus* Neumann 1906 which parasitize the Collocaliini. He erected a subgenus *Collodennyus* for the majority, a subgenus only known from the Collocaliini. *D.* (*C.*) *medwayi* Ledger 1970 is the parasite of *gigas* and is a member of the *distinctus* group found on *Collocalia* sensu stricto. He therefore supports the second suggestion of Medway & Wells (1969) that *gigas* comes from a non-echo locating stock and has subsequently lost the glossy plumage of its relatives. In view of the differences set out above I propose that *Hydrochous* Brooke 1970 be regarded as a full genus containing only the type species *gigas* Hartert & Butler 1901. The corollary is to give full generic rank to *Aerodramus* Oberholser 1906 containing as its type *brevirostris* Horsfield 1839 and also *spodiopygia*, *francica*, *elaphra*, *unicolor*, *vanikorensis*, *inquieta*, *salangana*, *hirundinacea*, *leucophaea*, *fuciphaga*, *maxima* and *papuensis*. *Collocalia* Gray is thus restricted to its type species *esculenta* L. and also *marginata* and *troglodytes*.

Peters (1960) can be regarded as the base line for a discussion of the Hirundinidae. He recognized two subfamilies, the Pseudochelidoninae and the Hirundininae. Since he wrote, the Pseudochelidoninae has had a second species, *Pseudochelidon sirintarae* Thonglongya (1968) added to it. Having seen material of the type species, *P. eurystomima*, from the Congo and of *sirintarae* from Thailand I can see no reason to regard them as congeneric. *P. sirintarae* is, I believe, correctly placed in the Pseudochelidoninae despite our ignorance of its breeding habits. *P. eurystomima* nests in tunnels it makes in flattish sandbanks exposed by falling river levels. Thonglongya (1968) gives a number of distinctions between *sirintarae* and *eurystomima*. Among them he gives "bill more than half as wide again at gape, half as long again, and flatter; less marked ridge between the nasal apertures;". The differences in the shape and proportions of the bill and mouth show that they have very different feeding ecologies, *sirintarae* probably being able to take much larger prey and perhaps in different microhabitats. In view of the differences in morphology, ecology and zoogeographic region I propose:—

Eurochelidon, gen. nov.,

with type species *Pseudochelidon sirintarae* Thonglongya (1968) and no others known. *Eurochelidon* is feminine and derived from the Greek words *Euros*, the southeast wind, and *Chelidon*, a swallow.

For the old world Peters (1960) recognized in the Hirundininae *Cheramoeca* Cabanis 1850, *Pseudhirundo* Roberts 1922, *Riparia* Forster 1817, *Phedina* Bonaparte 1857, *Ptyonoprogne* Reichenbach 1850, *Hirundo* L. 1758, *Cecropis* Boie 1826, *Petrochelidon* Cabanis 1850, *Delichon* Horsfield & Moore 1854, *Psalidoprocne* Cabanis 1850.

Ptyonoprogne differs from *Hirundo* only in lacking dark metallic blue above. But there is little gloss or iridescence in the plumage of juveniles of *Hirundo* and its total loss in the predominantly arid country frequenting *Ptyonoprogne* is not of generic significance. Its mud pellet nest and manner of flight are indistinguishable from *Hirundo* and there is no good reason to separate them. Mayr & Bond (1943) retained it as a genus because they were arguing against the old view that it was part of *Riparia*.

By analogy with the swifts discussed above the case for maintaining

Pseudhirundo, *Cecropis* and *Petrochelidon* sunk in *Hirundo* by many modern writers is based on the correspondence of certain colour patterns and nesting habits. *Pseudhirundo* has a grey rump, the rest of the upperparts being the usual dark metallic blue, and builds its nest in holes in bare ground not made by itself but usually by rodents. *Cecropis* has a red rump and a deeply forked tail and normally builds an entrance tunnel to its mud pellet nests. *Petrochelidon* has a red rump and a virtually square tail and does not build an entrance tunnel to its mud pellet nests: some species are colonial breeders. All these genera differ significantly from *Hirundo* which has a rump concolorous with the back and builds an open half cup or cup shaped nest of mud pellets.

Pseudhirundo does not use mud at all in constructing its nests but uses pre-existing holes in the ground, which shows it to be a primitive swallow sensu Mayr & Bond (1943) and not at all closely related to *Hirundo*, *Cecropis*, *Petrochelidon* and *Delichon* which build nests of mud pellets, despite its possession of dark metallic blue upper parts. Peters (1960) should have placed *Psalidoprocne* somewhere before *Ptyonoprogne* in his list since it is also a primitive hole nesting species and kept all the recently evolved, mud pellet using genera at the end.

Pseudhirundo is probably not a monotypic genus. Williams (1966) described *Hirundo andrewi* (sic – it should have been *H. andreae* in terms of Appendix D 20 of the International Code of Zoological Nomenclature). It is described as more robust (whatever that means in this context) than *P. griseopyga* (Sundevall) and having smoky grey where the latter has white on the underparts and under wing coverts. *P. griseopyga* shows, as do many other old world swallows which are white below, some individual variation in the colour of the underparts, varying between white, pinkish white and pale grey. *P. andrewi* may be an extremely dark individual of *P. griseopyga* since it does not differ in pattern or measurements from *P. griseopyga* as one would expect a good species of swallow to do. C. W. Benson who saw the type of *P. andrewi* some years ago writes (*in litt.*) "I was quite unimpressed that it was a good species". Hall & Moreau (1970) place *P. andrewi* as a race of *P. griseopyga:* this is a possibility which does not appeal to me until it is shown to have a discrete breeding range.

Wolters (1971) has recently erected the genus *Phedinopsis* for *Phedina brazzae* Oustalet 1886. *P. brazzae* nests in tunnels in vertical sandbanks after the manner of *Riparia* (Chapin 1953) whereas *P. borbonica* (Gmelin 1789), the type of *Phedina* Bonaparte 1857, places its nest, a cup of vegetable matter without mud, in a sheltered niche in the rocks (Rand 1936: 428). The two species, *borbonica* and *brazzae*, apparently represent a prepleistocene radiation of swallows which has been largely suppressed by the more recently evolved, mud pellet using *Hirundo* and its relatives in the world continental areas leaving *borbonica* in Madagascar and the Mascarene Islands where no *Hirundo* or relative breeds and *brazzae* in a specialized niche in the lower Congo basin. In view of the fact that they are relicts of an ancient and doubtless once widespread stock and the difference in breeding habits and ecology I believe that recognition of *Phedinopsis* Wolters 1971 is warranted.

I am obliged to C. W. Benson and M. P. Stuart Irwin for criticizing the draft of this paper and to the authorities of the National Museums of Rhodesia, the Field Museum of Natural History and the United States National Museum for facilities for study. My visit to the U.S.A. was made while holding a Frank M. Chapman memorial grant from the American Museum of Natural History.

References:
Becking, J. H. 1971. The breeding of *Collocalia gigas*. *Ibis* 113: 330–334.
Brooke, R. K. 1964. Avian observations on a journey across central Africa and additional information on some of the species seen. *Ostrich* 35: 277–292.
— 1970. Taxonomic and evolutionary notes on the subfamilies, tribes, genera and subgenera of the swifts (Aves: Apodidae). *Durban Mus. Novit.* 9: 13–24.
— 1971. Geographical variation in the Little Swift *Apus affinis* (Aves: Apodidae). *Durban Mus. Novit.* 9: 93–103.
Chapin, J. P. 1953. The birds of the Belgian Congo, 3. *Bull. Am. Mus. Nat. Hist.* 75A.
Hall, B. P. & Moreau, R. E. 1970. *An Atlas of speciation in African passerine birds*. London: British Museum (Nat. Hist.)
Lack, D. 1956a. The species of Apus. *Ibis* 98: 34–62.
— 1956b. A review of the genera and nesting habits of swifts. *Auk* 73: 1–32.
Ledger, J. A. 1970. A preliminary review of *Dennyus* (Mallophaga: Menoponidae) parasitic on swiftlets. *Journ. Ent. Soc. S. Afr.* 33: 239–260.
— 1971. A review of *Dennyus* (Phthetiraptera: Monoponidae) parasitic on the avian genera *Apus* and *Cypsiurus*. *Journ. Ent. Soc. S. Afr.* 34: 37–56.
Mayr, E. & Bond, J. 1943. Notes on the generic classification of the swallows, Hirundinidae. *Ibis* 85: 334–341.
Medway, Lord. 1966. Field characters as a guide to the specific relations of swiftlets. *Proc. Linn. Soc. Lond.* 177: 151–177.
Medway, Lord & Wells, D. R. 1969. Dark orientation by the Giant Swiftlet *Collocalia gigas*. *Ibis* 111: 609–611.
Orr, R. T. 1963. Comments on the classification of swifts of the subfamily Chaeturinae. *Proc.* 13 *Internat. Orn. Congr.* 1: 126–134.
Peters, J. L. 1960. *Check-list of the birds of the world* IX. Cambridge, Mass.: Museum of Comparative Zoology.
Rand, A. L. 1936. The distribution and habits of Madagascar birds. *Bull. Am. Mus. Nat. Hist.* 72: 143–499.
Sharpe, R. B. & Wyatt, C. W. 1894. *A monograph of the Hirundinidae*. London: Henry Sotheran.
Thonglongya, K. 1968. A new martin of the genus *Pseudochelidon* from Thailand. *Thai. Nat. Sci. Pap., Fauna Ser.* 1: 1–9.
Williams, J. G. 1966. A new species of swallow from Kenya. *Bull. Brit. Orn. Cl.* 86: 40.
Wolters, H. E. 1971. Probleme der Gattungsabrenzung in der Ornithologie. *Bonn. Zool. Beitr.* 22: 210–219.
Zehnter, L. 1890. On the development of the feet of *Cypselus melba*. *Ibis* (6) 2: 196–200.

An early record of a Blue-cheeked Bee-eater *Merops superciliosus* in the Isles of Scilly

by J. L. F. Parslow

Received 16th February 1972

In June 1962, through the courtesy of Lt.-Commander T. M. Dorrien Smith, I was able to examine the unique collection of birds which was then housed at Tresco Abbey, Isles of Scilly. Virtually all the specimens had been collected in Scilly and among many British rarities was one specimen labelled as a 'Bee-eater' (*Merops apiaster*) which in fact proved to be an adult Blue-cheeked Bee-eater *Merops superciliosus*.

According to the Tresco Abbey record books, three bee-eaters had been killed at Scilly. Two of these were immatures, collected in September 1901 (*cf.* Clark 1906) and on 8th October 1906 (*cf.* Ogilvie-Grant 1906), and the third an adult, shot on 13th July 1921. It seemed likely that it was this last bird which was the Blue-cheeked Bee-eater, and a conversation I had with Mrs. Eleanor Dorrien Smith, widow of Major A. A. Dorrien Smith, who was responsible for building up the collection, showed this to be so.

According to Mrs. Dorrien Smith, it was Major Dorrien Smith's general policy that only one specimen of each species should be obtained for the collection. However, when an adult bee-eater was reported from St. Mary's in July 1921 he asked for it to be shot as the only specimens of *M. apiaster* in the collection were the two immatures. The bird was therefore killed and sent to Pratt and Sons of Brighton for preparation and mounting. It was then added to the collection where for forty years it was assumed to be an adult *M. apiaster.*

When housed at Tresco Abbey the specimen was in a sealed cabinet and I was unable to handle it. The collection has, however, now been moved to the new museum on St. Mary's, and through the kindness of Mr. P. Z. Mackenzie and the Isles of Scilly Museum Association, I was recently able to re-examine, handle and measure the specimen, and have it photographed plate.

Specific Identification

Only a brief description is given since the Plate is sufficient to confirm the specific identification, and a sketch of the head pattern, which identifies the subspecies (see below) is shown in the Figure.

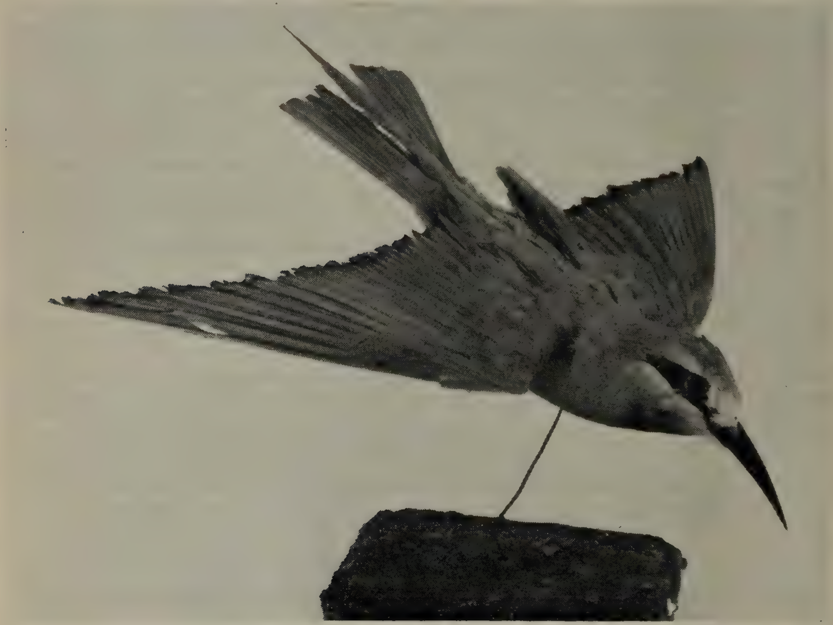

Photo: F. E. Gibson

Plate: First British specimen of Blue-cheeked Bee-eater *M. s. persicus*, shot St. Mary's, Isles of Scilly, 13th July 1921, now in Isles of Scilly Museum.

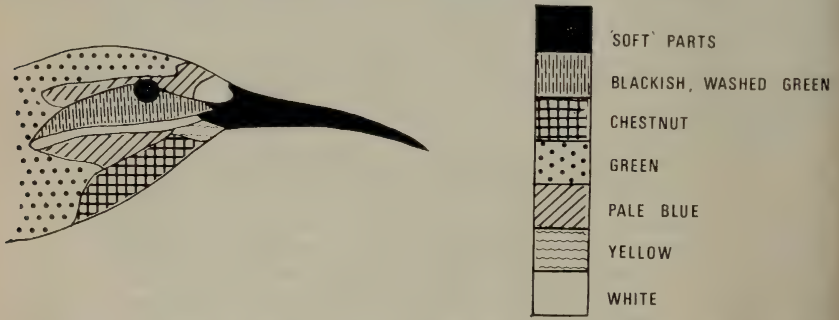

Figure: Sketch of head of Scilly specimen of Blue-cheeked Bee-eater; white line below dark facial mask identifies it as *M. s. persicus.*

Upperparts: Predominantly bright green, with an admixture of pale blue and brown (most feathers green with brown bases and pale blue tips), on crown, nape and mantle, somewhat browner on lower back and bluer on lower rump, with tail olive-brown; tail more-or-less square with one of the central feathers 41 mm longer than the other rectrices (the other elongated central feather had broken off). Wing-coverts brownish-green, some with pale blue or bluish-green tips; secondaries brownish-olive on outer webs and near vanes on inner webs, rest of inner webs warm chestnut-brown; all secondaries tipped blackish. Primaries similar but with greyish-blue wash on outer webs and more extensive black tips to outermost feathers.

Underparts: Chin ochrous-yellow merging into chestnut throat-patch. Breast and belly bright green, some feathers tipped turquoise or pale blue; under tail-coverts greenish-turquoise, under tail-feathers greyish-brown. Underwing chestnut with blackish-brown tips to secondaries and innermost primaries, this dark colouring extending along the distal half of the outermost primaries.

Measurements: Wing 158 mm; bill 45 mm from feathers, 35 mm from nostril; tarsus 15 mm; tail 140 mm (central feather), other rectrices 99 mm.

Subspecific Identification

Three races of *M. superciliosus* are generally recognised (e.g. Vaurie 1965) of which two, *M. s. chrysocercus* (breeds northwest Africa) and *M. s. persicus* (breeds southwest Asia and locally in southeast Russia and northern Egypt), might occur as vagrants in western Europe. Both are migratory, wintering in tropical and southern Africa. The narrow white band beneath the dark facial mask (see Figure) is sufficient to distinguish the Isles of Scilly specimen *M. s. persicus* (*cf.* Vaurie 1965).

The only other British record of the species—also in the Isles of Scilly, on St. Agnes on 22nd June 1951—refers to a sight record in which the subspecies, although tentatively ascribed to *M. s. persicus* on the basis of its relatively short attentuated central tail-feathers, could not be identified with certainty (Anon. 1952; *cf.* British Ornithologists' Union 1971). The specimen reported here therefore not only pre-dates the only other existing record but is also the first of the subspecies *M. s. persicus* in Britain.

Acknowledgements

I am grateful to Lt. Commander T. M. Dorrien Smith and other members of his family for hospitality on Tresco, also to Mr. P. Z. Mackenzie and the Isles of Scilly Museum Association, and to Mr. F. E. Gibson for photographing the specimen. My wife kindly re-drew the Figure.

References:
Anon. 1952. Blue-cheeked Bee-eater in Scilly: a new British bird. *Brit. Birds* 45: 225 – 227.
British Ornithogists' Union, 1971. *The status of birds in Britain and Ireland.* Oxford.
Clark, J. 1906. *Birds* in *The Victoria County History of Cornwall*, vol. 1, ed. W. Page. London: James Street.
Ogilvie-Grant, W. R. 1906. The birds of Scilly. *Zool.* (4) 10: 470.
Vaurie, C. 1965. *The Birds of the Palearctic Fauna: non-Passeriformes.* London: H. F. & G. Witherby.

Skins of extinct or near extinct birds in Cambridge

by C. W. Benson

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Introduction

This paper contains an inventory of extinct or near extinct forms in the collection of birds in the University Museum of Zoology, Cambridge. It is confined to skins. Osteological or other material is not considered, except that passing mention is made if the relevant form is represented by a skin. It is intended to deal with this other material in due course.

The criterion for inclusion is whether a form is mentioned in Greenway (1967). If Vincent (1966) had also been followed, many further forms believed to still survive, but to be rare and endangered, would have had to be added, thereby rendering this paper unduly long. Benson (1970 – 71) dealt with the collections in Cambridge from islands in the western Indian Ocean (Malagasy Region). Extinct or near extinct forms from this area are therefore relegated to a summarised appendix.

I am grateful to Dr. K. A. Joysey, the Director of the University Museum, for his advice in the preparation of this paper, and to both him and R. D. Norman for continuous help since I started work on the collection in 1965. Many of the specimens listed here have been compared with material in the British Museum (Natural History), where I have been granted all necessary facilities, and moreover the identifications of particular specimens have been checked by I. C. J. Galbraith, D. Goodwin, D. J. Freeman and S. A. Parker. Others who have so assisted during visits to Cambridge include Dr. Salim Ali, J. Bond, Dr. W. R. P. Bourne, D. T. Holyoak, Dr. A. R. Phillips, Dr. S. Dillon Ripley, Dr. D. L. Serventy and R. Wagstaffe. The last mentioned has also commented on a draft of this paper.

The value of the bird collections in Cambridge is above all due to Prof. A. Newton, who was Professor of Zoology from 1866 until his death in 1907. He was especially interested in island avifaunas, in which of course extinction and reduction of already small populations has been most pronounced. There is a good representation of material in Cambridge from the Hawaii Islands, New Zealand (including outlying groups such as the Aucklands and Chathams), the West Indies, the Fiji Islands, the Malagasy Region, and Christmas Island (eastern Indian Ocean). Preparation of this inventory was stimulated by the excellent one of material in Paris by Jouanin (1962), not mentioned by Greenway (1967).

Inventory of forms

Unless otherwise indicated, it can be assumed that each specimen is adult; while "o" indicates a specimen of indeterminate sex. Each has been made up as a cabinet specimen unless indicated as mounted. The order and nomenclature of Greenway (1967) is in general followed.

Diomedea albatrus Pallas

Ad. ♂, Victoria, Vancouver Island, 6th May 1862; imm. ♂ and ♀, Juan de Fuca Strait (48° 15′ N., 124° W.), 30th Oct./3rd Nov. 1867; imm. ♀, Monterey, California, 11th July 1868. All coll. J. Hepburn.

The three immature specimens are in a wholly brown dress.

Pterodroma hasitata (Kuhl)

Mounted specimen, "Guadeloupe?; Lafresnaye coll'n.; Nat. Hist. Soc., Boston Mass., 1887".

Pterodroma carribea Carte

There are eight specimens in the collection assembled by Sir Edward Newton when he was Colonial Secretary in Jamaica. They were collected for him by W. Nock at Cinchona Plantation, St. Andrew's, between 4th Nov. and 12th Dec. 1879. Bourne (*Bull. Brit. Orn. Cl.*, 1965: 100) refers to six specimens collected by Edward Newton in Nov. 1879, dispersed around the world. According to the original register of the Newton Jamaica collection, compiled by Prof. A. Newton, 22 specimens of *P. carribea* were collected, all by Nock, within the dates and at the locality as given above. Dispersals clearly indicated are as follows:—one to Harvard, one to New York, one to Salvin (in Brit. Mus., Nat. Hist., see Salvin, *Cat. birds Brit. Mus.* 25, 1896: 404), one to Tristram (see his *Cat. birds*, 1889: 5) and two to Paris (see Jouanin 1962: 263). Two specimens dated 17th November 1879, annotated "S" in the register, may have gone to Stockholm, where according to Bourne (*loc. cit.* and pers. comm.) there is a single specimen so dated.

Branta sandvicensis (Vigors)

Four specimens, only one of which bears any precise data, having been collected on Hawaii Island in Nov. 1887 by Scott B. Wilson.

Anas wyvilliana P. L. Sclater

Twelve specimens, from Mihau, Kauai, Oahu and Hawaii Islands, in the Hawaii Archipelago, coll. between 1888 and 1902.

Rhodonessa caryophyllacea (Latham)

♀, "India, 1846, E. Blyth", ex H. E. Strickland 1867; ♂, "Calcutta bazaar", Feb. 1888, ♀, no locality, 7th Dec. 1888, both ex Indian Museum Aug. 1900.

En passant, there is also a mounted skeleton, ex Lord Lilford July 1893. None of this material is listed by Salim Ali (Wildfowl Trust, 11th Ann. Report, for 1958 – 59, 1960: 55 – 60). Mr. Wagstaffe informs me that there are also at least four skins in the Liverpool City Museums.

Camptorhynchus labradorius (Gmelin)

♂ ,without particulars, ex H. E. Strickland 1867.

Mergus australis Hombron & Jacquinot

♂, Auckland Islands, Dec. 1874, ex A. von Hügel.

For a detailed account of this species, in which this specimen is listed, see Kear & Scarlett (*Wildfowl* 21, 1970: 78 – 86).

Gymnogyps californianus (Shaw)

♂, ♀, Aqua Fria (not traced), 14th/16th Oct. 1854, coll. C. Winch, ex J. Hepburn 1870.

Tympanuchus cupido cupido (Linnaeus)

♂ (mounted), Marthas Vineyard, 20th Feb. 1902, ex Mus. Comp. Zool., Harvard.

Coturnix novaezelandiae Quoy & Gaimard

♂, ♀, both "New Zealand, March 1850", ex Sir W. Jardine 1886.

Grus japonensis (P. L. S. Müller)

♂, "died in captivity", ex Lord Lilford 1898.

Rallus (*Cabalus*) *modestus* Hutton

o, Chatham Island, no date, ex H. O. Forbes 1898.

Rallina (*Nesoclopeus*) *poeciloptera* Hartlaub

♂, Draiba, Ovalau, Fiji Iss., July 1877, coll. A. von Hügel, who also wrote "Scarce. Very difficult to procure".

Porzanula palmeri Frohawk

Two oo, Laysan, Hawaii Iss., undated, ex R. C. L. Perkins.

One of these died on Oahu, Hawaii Iss., in 1893, and was received in spirit in 1894. It was skinned in May 1895. It is a much paler grey on the underside than the other, received in June 1904. Also, the upperside is more sandy in tone, and black on the lores and behind the gape is lacking.

Pennula millsi Dole

o (mounted), Hawaii Island, ca. 1859, ex Scott B. Wilson 1889.

Greenway believes that *P. millsi* is merely a darker form of *P. sandwichensis* (Gmelin), and suggests that the paler form represents the immature plumage. One wonders whether the difference might not be due to immersion in spirit (or exposure to light), see under *Porzanula palmeri* above.

Laterallus jamaicensis jamaicensis (Gmelin)

Bond (1956, *Check-list birds West Indies*. Philadelphia: Acad. Nat. Sci.) records about six specimens from Jamaica, and in 12th suppl. to his Check-list, 1967, records further Jamaica material in Cambridge. Details of the four specimens are:—two ♂♂, Pautrepaut, Trelawny, 31st May 1859; ♀, 2nd Aug. 1859, ♂, 10th Sept. 1859, Freeman's Hall, Trelawny. They were collected by W. Osburn, and are briefly mentioned by P. L. Sclater (*Proc. Zool. Soc. Lond.*, 1861: 81). They were received from A. & E. Newton Dec. 1874.

Rhynochetos jubatus Verreaux & Des Murs

♂, Boulari, New Caledonia, 8th Aug. 1876, coll. E. L. Layard.

There are also two mounted specimens, a ♀, also collected at Boulari by Layard, 12th Nov. 1876, and one merely marked "New Caledonia".

Thinornis novaeseelandiae (Gmelin)

There are three specimens collected in 1892 – 99 on South-east Island in the Chathams, to which the species is now apparently confined. Another was collected on the Sisters in the Chathams in Jan. 1898, and was bought at a sale at Stevens's in London on 22nd Aug. 1899, while a fifth is merely marked "Chatham Islands".

Numenius borealis (Forster)

There are four specimens received during the last century, none bearing a precise locality or date of collection.

Coenocorypha aucklandica pusilla (Buller)

♂, ♀, South-east Island, Chathams, 9th/13th May 1892, ex H. O. Forbes 1898.

Wing-lengths 94, 98 mm. There is a third specimen, merely marked "Chatham Islands", wing 97 mm. Three speciemns from Antipodes Island (*C. a. meinertzhagenae* Rothschild) and Snares (*C. a. huegeli* Tristram) are larger, having wing-lengths 106 – 109 mm. Falla *et al.* (1966) regard *pusilla* as a full species.

Rhinoptilus bitorquatus (Blyth)

o, "Madras, 1846, T. C. Jerdon", ex H. E. Strickland 1867.

Alca impennis Linnaeus

o (mounted), lacking any precise data, although listed in *Cat. coll'ns. Univ. Mus. Camb. Phil. Soc.*, 1836: 15 as "foreign".

There is also a mounted skeleton, from Funk Island (east coast of Newfoundland), 1863, ex Bishop of Newfoundland; and another, east coast of Newfoundland, ex Lord Lilford 1888. There are furthermore eight eggs (Tomkinson & Tomkinson, *Bull. Brit. Mus., Nat. Hist.* 3(4), 1966: 125).

Ducula goliath (G. R. Gray)

o, New Caledonia, no date, ex A. & E. Newton 1876.

This specimen, which has been seen by D. Goodwin, was noted by him as completing the post-juvenile moult.

Hemiphaga novaeseelandiae chathamensis (Rothschild)

Two oo, lacking precise data, ex H. O. Forbes 1898.

Immediately distinguishable from material of the nominate subspecies by the lower back and rump being pale grey, and the wings predominantly so; wing-lengths 260, 267 mm.

Ectopistes migratorius (Linnaeus)

Six ♂♂ (one mounted), two ♀♀, imm. o, lacking precise data, from various sources.

The mounted specimen is ex W. Swainson 1840. It is presumed to have been used by him in erecting the genus *Ectopistes* (*Zool. Journ.* 3, 1827: 362).

The immature specimen is also ex Swainson 1840.

Leptotila wellsi (Lawrence)

♂, Fontenoy, Grenada, 2nd Mar. 1889, coll. J. Grant Wells.

Strigops habroptilus G. R. Gray

Two ♀♀, seven oo (two mounted), lacking precise data, from various sources.

Nestor meridionalis productus (Gould)

o, "bought at Edinburgh 1852", ex H. E. Strickland 1867.

Conuropsis carolinensis carolinensis (Linnaeus)

Six oo (one mounted), lacking precise data, from various sources.

Amazona vittata vittata (Boddaert)

o, brought from Puerto Rico, died at St. Croix 24th July 1857, ex A. Newton.

Prosopeia personata (G. R. Gray)

♂, ♀, Rewa River, Viti Levu, Fiji Iss., June 1875, ex A. von Hügel; ♂, two ♀♀, o, Vitu Levu (one each from Nadarwatu 3,000 feet and Navua River), Apr. 1901, coll. L. W. Wiglesworth.

Cyanoramphus malherbi Souancé

♂, Open Cove, South Island, New Zealand, 4th Jan. 1899; ♂, Nelson (also South Island, N.Z.), 1895, ex Sir W. L. Buller; ♂, without any particulars.

The first two specimens are included in a survey of the status of the species by M. Harrison (*Notornis* 17, 1970: 115 – 125). Wing-lengths 105, 106, 106 mm.

Neophema chrysogaster (Latham)

o, "cleaned and baked 1856", ex Blackwood.

Neophema pulchella (Shaw)

Four ♂♂, ♀, lacking precise data, ex Blackwood, W. Swainson 1840 and H. E. Strickland 1867.

Pezoporus wallicus wallicus (Kerr)

♂, ♀, three oo (one mounted), lacking precise data, ex Blackwood, W. Swainson 1840, H. E. Strickland 1867 and P. J. Selby 1869.

Sceloglaux albifacies subsp.

Two oo (one mounted), lacking precise data, ex W. L. Rothschild.

The mounted specimen is the less tawny in general colour of plumage, yet differs conspicuously in having white rather than tawny cheeks. Possibly the mount is *S. a. albifacies* (G. R. Gray), the other *S. a. rufifacies* Buller. There appears to be little difference in size between the two, the former having wing-length 258, the latter 262 mm.

Campephilus principalis principalis (Linnaeus)

♂, ♀, Big Lake, Franklin Parish, Louisiana, 12th July 1889, coll. G. E. Berger; ♂, "Carolina, McMillan", ex Sir W. Jardine 1886.

Atrichornis rufescens (Ramsay)

o, "Cowlong Grass, Richmond River", no date, coll. E. P. Ramsay, ex A. &. E Newton 1875; ♀, merely "New South Wales"; ♂, "Booyong R. R., N. S. W., 26th Oct. 1899, S. W. Jackson", ex Capt. L. Harrison 1919; two oo, Richmond River, 1874, coll. Cockerell, ex A. von Hügel.

Troglodytes aedon mesoleucus (P. L. Sclater)

♂, Fond St. Jacques, Saint Lucia, 6th Apr. 1889, ex West India Committee Brit. Assoc. 1889.

Troglodytes aedon musicus (Lawrence)

♂, St. Vincent, no date, ex C. F. Lister.

Myadestes genibarbis sibilans Lawrence

Three ♂♂, ♀, 0, St. Vincent (only the unsexed specimen dated, i.e. 21st Feb. 1878), ex C. E. Lister.

Ramphocinclus brachyurus sanctaeluciae Cory

♀, Fond St. Jacques, Saint Lucia, 26th Mar. 1889, ex West India Committee Brit. Assoc. 1889.

Cichlherminia lherminieri lherminieri (Lafresnaye)

♂, Guadeloupe, 20th Feb. 1902, ex A. Newton.

Cichlherminia lherminieri sanctaeluciae (P. L. Sclater)

♀, Fond St. Jacques, Saint Lucia, 22nd Mar. 1889, ex West India Committee Brit. Assoc. 1889.

There are also three specimens of *C. l. dominicensis* (Lawrence), although this subspecies is not rare (Greenway 1967: 382).

Phaeornis obscurus myadestinus Stejneger

Two ♂♂, two ♀♀, Kauai Island, Hawaii Iss., May 1894, Oct. 1895, coll. R. C. L. Perkins.

Phaeornis obscurus rutha Bryan

From Molokai Island, Hawaii Iss.:—0, June 1888, coll. Scott B. Wilson; ♂, May 1893, juv. ♂, 25th June 1893, coll. R. C. L. Perkins.

The juvenile is still almost completely in a mottled dress.

Phaeornis obscurus lanaiensis Wilson

From Lanai Island, Hawaii Iss.:—♂, June 1888, coll. Scott B. Wilson; ♀, Feb. 1894, juv. ♀, July 1894, coll. R. C. L. Perkins.

The juvenile is still almost completely in a mottled dress. There are also eight specimens of *P. o. obscurus* (Gmelin) from Hawaii Island, but this form is not uncommon (Greenway 1967: 385).

Phaeornis palmeri Rothschild

♂, 0, Kauai Island, Hawaii Iss., May 1895, coll. R. C. L. Perkins.

The male is in a partially mottled juvenile-like dress, yet the testes were recorded as enlarged.

Turnagra capensis tanagra (Schlegel)

From North Island, New Zealand:—0, "New Zealand", no date, ex Sir W. L. Buller 1887.

The skeleton of this specimen is also available.

Turnagra capensis capensis (Sparrman)

From South Island, New Zealand:—0, "New Zealand 1850", ex H. E. Strickland 1867; ♂, Taipo (west coast), Sept. 1873, ex A. & E. Newton 1887; six ♂♂, four ♀♀, Secretary Island (off south-west coast), 27th Dec. 1898/17th Feb. 1899; ♂, Lyall Bay, 17th Jan. 1899; ♂, Gaer Arm, 30th Jan. 1899.

The last 12 specimens were the bulk of a lot of 14 purchased by Prof. Newton at a sale at Stevens's, London, on 22nd Aug. 1899. All appear to have been collected by H. H. Travers. According to the original register of the New Zealand collection, compiled by Prof. Newton, the other two (♂, ♀, Secretary Island, 12th/17th Jan. 1899) were disposed of to the United States National Museum on 20th Mar. 1905 (and see Fleming, *Proc. Biol. Soc. Wash.* 28, 1915: 123). I am grateful to D. G. Medway (of New Plymouth, N. Z., pers. comm., 12th Oct. 1966) for information about the above localities, and according to which Lyall Bay and Gaer Arm are on the mainland very close to Secretary Island. He also advised that the specimens from Secretary Island were the only ones known from that locality.

Wing-lengths in millimetres are as follows:—

o,	"New Zealand"	118
♂,	Taipo	127
♂♂,	Secretary Island	123, 126, 126, 127, 129
♀♀,	Secretary Island	119, 121, 123, 127
♂,	Lyall Bay	123
♂,	Gaer Arm	129

This series is immediately distinguishable from the specimen of *T. c. tanagra*, particularly on the underside, as per Falla *et al.* (1966: 239).

Dasyornis brachypterus subspp.

Four oo, two "New South Wales", two no locality at all, ex Blackwood, W. Swainson 1840 and H. E. Strickland 1867.

Metabolus rugensis Hombron & Jacquinot

♀, Truk Island, Caroline Iss., 1st. Feb. 1896, ex A. Newton 1900.

This specimen is rufous above, tawny whitish below; see Mayr (1945, *Birds Southwest Pacific:* 295) on extreme variability in this species.

Petroica traversi (Buller)

♀, Little Mangare Island, Chatham Iss., no date, ex H. O. Forbes 1898; two oo, Chatham Iss., 1890, coll. H. Palmer, ex A. Newton 1890; o, Chatham Iss., no date, ex H. O. Forbes 1898.

Leucopeza semperi P. L. Sclater

♀, Fond St. Jacques, Saint Lucia, 3rd Apr. 1889, ex West India Committee Brit. Assoc. 1889.

The following 19 forms (in the family Drepanididae) are all from the Hawaii Islands. Unless otherwise indicated, the specimens were collected by Scott B. Wilson (1887 – 88) or R. C. L. Perkins (1892 – 96). Those of the latter are particularly well labelled, the place-name on the island in question and altitude being usually given. Such details are omitted below, in interests of economy of space .Some of these forms are also represented by material in spirit, not however immediately accessible.

Viridonia sagittirostris Rothschild

♂ (mounted), ♀, Hawaii Island, Jan. 1896.

Loxops maculata flammea (Wilson)

Six ♂♂ (one mounted), four ♀♀, juv. ♂, Molokai Island, June 1888, June 1893, Feb. 1902.

Loxops maculata montana (Wilson)

Four ♂♂, three ♀♀, o, juv. ♀, Lanai Island, May/June 1888, Dec. 1893/Feb. 1894, July 1894.

All the other subspecies are also represented, the total number of specimens of the species being 65.

Loxops coccinea rufa (Bloxam)

♂, without data, coll. J. K. Townsend, ex Acad. Nat. Sci, Philad. 1899.

All the other subspecies are also represented, the total number of specimens of the species being 35.

Hemignathus obscurus procerus Cabanis

Four ♂♂ (one mounted), two ♀♀, Kauai Island, Aug./Sept. 1888, Apr./May, Oct. 1895.

Hemignathus obscurus obscurus (Gmelin)

Two ♂♂ (one mounted), ♀, two oo, juv. ♂, Hawaii Island, Feb./Mar. 1888, June, Sept. 1892, Sept. 1894, Jan. 1896.

Hemignathus lucidus hanapepe Wilson

Four ♂♂, ♀, Kauai Island, Sept. 1888, Oct. 1895.

Two of the males (Oct.) are mainly in a plumage like the female, and probably immature, being mainly greyish above, dingy whitish below (one with some yellowish wash).

Hemignathus lucidus lucidus Lichtenstein

Two oo, without data, coll. J. K. Townsend, ex Sir W. Jardine 1886.

One of these two was identified by Dr. J. Cabanis in Berlin in 1889, and was also compared with the single specimen in the British Museum (Natural History) in 1969. They are presumably from Oahu Island.

Hemignathus lucidus affinis Rothschild

Four ♂♂ (one mounted), ♀, juv. ♀, Maui Island, Mar./May 1894, Oct. 1896.

The juvenile (dated May 1894) was following and being fed by a parent (not apparently collected). It is similar to the apparently adult female, but has a shorter bill (culmen from base 22 as against 25 mm).

Hemignathus wilsoni (Rothschild)

Five ♂♂, two ♀♀, o (mounted), juv. ♂, juv. ♀, Hawaii Island, July 1887, Feb./Mar. 1888, July/Aug. 1892, Aug. 1894, June 1895, Jan. 1896.

Pseudonestor xanthophrys Rothschild

Three ♂♂ (one mounted), ♀, juv. ♂, Maui Island, Mar. 1894, May, Oct. 1896.

Himatione sanguinea freethii Rothschild

o, Laysan Island, undated, ex R. C. L. Perkins 1902.

Palmeria dolei (Wilson)

Three ♂♂ (one mounted), two ♀♀, Molokai Island, June/July, Sept. 1893; ♂, juv. ♂, Maui Island, July 1888 (juv.), Mar. 1894 (adult).

According to the original register of the Hawaii collection, the juvenile is the type of *P. mirabilis* Rothschild (*Ibis*, 1893: 113).

Psittirostra psittacea (Gmelin)

Four ♂♂, Hawaii Island, May/June 1887; ♂ (mounted), o, Lanai Island, June 1888; ♂, three ♀♀, Kauai Island, Aug./Sept. 1888, Oct. 1895; o, Molokai Island, June 1888.

Psittirostra palmeri Rothschild

Thirteen ♂♂ (one mounted), two ♀♀, two juv. ♂♂, Hawaii Island, July, Sept. 1892, Mar. 1896.

A female dated Sept. 1892 is marked "mother of two young", one of which is one of the two juvenile males, the other juvenile being dated July 1892. Both appear to be fully grown, but are in a female-like dress.

Psittirostra kona Wilson

Two ♂♂, three ♀♀ (one mounted), Hawaii Island, June 1887, July/Aug. 1892.

Psittirostra bailleui Oustalet

Four ♂♂ (one mounted), two ♀♀, two oo, Hawaii Island, June/July 1887, Aug. 1894, Mar. 1896.

Drepanis pacifica (Gmelin)

o (mounted), Hawaii Island, undated, ex Scott B. Wilson 1889.

Received by Wilson from the Hon. C. R. Bishop 26th Mar. 1888, ex Mills collection.

Drepanis funerea A. Newton

♂, ♀ (mounted), juv. ♂, Molokai Island, 18th/25th June 1893 (adults), June 1896 (juv.).

The juvenile has the plumage matt rather than glossy black as in the adults. It also has a much shorter bill; culmen from base 48 as against 60 mm in the adult male. Furthermore it has pale coloration of the bill more extensive from the base towards the tip.

The same considerations apply to four Hawaii forms of the family Meliphagidae which now follows as in the Drepanididae above.

Notiomystis cincta hautura Mathews

♂, Little Barrier Island, 1885; ♂, ♀, "New Zealand", undated, ex T. C. Eyton 1886; ♀, "New Zealand, 1850, T. C. Eyton", ex H. E. Strickland 1867.

The first male has wing-length 106 mm, and falls within the range of measurements for males of the small *hautura* as per Mathews (*Bull. Brit. Orn, Cl.* 55, 1935: 159). The other three specimens are presumed to be also this form, endemic to Little Barrier Island (Salomonsen, in Peters's *Check-list birds world* 12, 1967: 401): ♂, wing 105, ♀♀, 97 ,100 mm.

Anthornis melanura melanocephala G. R. Gray

Two ♂♂, ♀, "Chatham Islands", no dates, ex Canterbury Mus. 1895 (♂), H. O. Forbes 1898 (♂, ♀.).

The ♂♂ have wing-lengths 105, 108, the ♀ 94 mm, whereas three ♂♂ of *A. m. incoronata* Bangs fron the Auckland Islands measure 90, 91, 92, three ♀♀ 81, 82, 87 mm, one ♂ of *A. m. dumerilii* (Lesson & Garnot) from North Island 85 mm, and one ♂ of *A. m. melanura* (Sparrman) from South Island 89 mm. Other specimens merely marked "New Zealand" measure 83 – 92 (eight ♂♂), 76, 80, 81 mm (three ♀♀).

Moho braccatus (Cassin)

Two ♂♂ (one mounted), two ♀♀, Kauai Island, Sept. 1888, Oct. 1895.

Moho bishopi (Rothschild)

Three ♂♂, Molokai Island, June, Aug./Sept. 1893.

Moho nobilis (Merrem)

o, without data, ex J. Hepburn 1870; two ♂♂ (one mounted), four ♀♀, o, juv. o, Hawaii Island, May 1887, Jan./Feb. 1888, June 1892, Dec. 1895.

The juvenile (dated June 1892) lacks yellow pectoral tufts. A female dated Feb. 1888 also lacks them, and is perhaps also a juvenile.

Chaetoptila angustipluma (Peale)

o (mounted), Hawaii Island, ca. 1859, ex Scott B. Wilson.

This specimen, one of only four in existence (Greenway 1967: 426), was originally in the Mills collection.

Zosterops strenua Gould

o, Lord Howe Island, undated, ex H. B. Tristram in 1888.

Heteralocha acutirostris Gould

Fifteen ♂♂ (one mounted), eleven ♀♀ (one mounted), without data, mostly ex Wellington Mus., N. Z., 1876.

Creadion carunculatus carunculatus (Gmelin)

From South Island, New Zealand:—♀, imm. ♀, Milford Sound, undated, ex. A. Newton 1900; imm. ♂, Taipo, Sept. 1873, o, without data, ex H. O. Forbes 1898, imm. o, likewise, ex W. Swainson 1840.

The three immature specimens are immediately distinguishable from the two adults in the way described by Falla *et al.* (1966: 234).

Loxigilla portoricensis portoricensis (Daudin)

From Puerto Rico:— ♂, Catania, 1st Apr. 1900; ♂. Mayaguey, 27th Aug. 1901; ♀ ,Las Marias, 11th Sept. 1901; all coll. B. S. Bowdish.

Greenway gives it as rare and localised. In fact Dr. D. Lack tells me that it is still common; and see also Bond (1956, *Check-list birds West Indies.* Philadelphia: Acad. Nat. Sci.).

Geospiza magnirostris magnirostris Gould

♂, "Voyage of Beagle. Dr. Armstrong". ex Sir W. Jardine 1886.

This specimen was purchased at the sale of the Jardine collection, together with another, smaller specimen, bearing the same data as quoted above. Jardine marked the larger one as *G. magnirostris*, the smaller as *G. strenua*. Both are in a wholly black plumage except for the under tail-coverts, the feathers of which are conspicuously and broadly margined with white. Their measurements in mm are:—

Culmen from nostril	Depth of bill	Wing
14	19·5	84
20	24	92

The small specimen agrees best in measurements with specimens of *G. magnirostris* from particular islands in the Galapagos Archipelago, the large one rather with Darwin's specimens (see Lack, 1947, *Darwin's Finches:* Table XXIII, p. 172). Lack (*op. cit.:* 23) suggests that these large specimens most probably came from Charles Island, and this is accepted (perfectly reasonably) by Greenway (1967: 437). There is no indication as to who collected the two specimens in Cambridge. It was not necessarily Charles Darwin, and could have been some other person who was on the voyage. After its conclusion they must have passed into the hands of Armstrong, about whom I have failed to find any information. In any event, it is evident that there is a further specimen of the large form of *G. magnirostris*, not mentioned by Greenway. There are also in Cambridge three skins of *G. fortis* and one each of *Camarhynchus parvulus* and *psittaculus*, bearing the same particulars as the two of *G. magnirostris*.

Summary

On the basis of J. C. Greenway's book (1967), an account is given of specimens of extinct or near extinct birds in the University Museum of Zoology, Cambridge. Skins only are considered. It is intended to deal with other material in due course. The total number of forms included is 104, of which 31 are from the Hawaii Islands, 19 from the Malagasy Region (see Appendix below), 16 from New Zealand and outlying islands and 13 from the West Indies. Two skins of *Psittacula exsul* (Rodriguez, Malagasy Region) are unique. There is one of *Chaetoptila angustipluma* (Hawaii Island), of which only three other specimens are known.

Appendix: Summary of forms from the Malagasy Region

Skins of extinct or near extinct forms from this region were dealt with in a paper by Benson (1970 – 71), and the following is simply a list of them (unless otherwise indicated, see 1971: 5 – 6):—*Pterodroma aterrima* (1970: 169), *Falco punctatus*, *Nesoenas mayeri*, *Streptopelia picturata rostrata*, *Psittacula krameri echo*, *P. eupatria wardi* (1971: 2, 5, 7), *P. exsul* (1971: 3, 5) (two skins, unique), *Otus insularis* (1971: 3), *Neodrepanis hypoxantha* (1971: 3), *Hypsipetes borbonica borbonica* (1971: 3), *H. b. olivacea* (1971: 3), *Coracina* (*Coquus*) *newtoni*, *C.* (*C.*) *typica*, *Terpsiphone corvina*, *Copsychus sechellarum*, *Bebrornis seckellensis*, *B. rodericanus*, *Zosterops mayottensis semiflava*.

The following form must be added to this list, since it is mentioned by Greenway (1967: 350) but not by Benson (1970 – 71):—*Otus rutilus capnodes* (Gurney), of which there are two specimens from Anjouan, in the Comoros, undated, ex Humblot through G. A. Frank, 1888.

References:

Benson, C. W. 1970 – 71. The Cambridge collection from the Malagasy Region. *Bull. Brit. Orn. Cl.* 90: 168 – 172. 91: 1 – 7.

Falla, R. A., Sibson, R. B. & Turbott, E. G. 1966. *A field guide to the birds of New Zealand.* London: Collins.

Greenway, J. C. 1967. *Extinct and vanishing birds of the world.* Revised ed'n. New York: Dover Publications.

Jouanin, C. 1962. Inventaire des oiseaux éteints ou en voie d'extinction conservés au Muséum de Paris. *Terre Vie* 109: 257 – 301.

Vincent, J. 1966. *Red data book.* Vol. 2—Aves. Morges, Switzerland: International Union for Conservation of Nature and Natural Resources. (There is a revised list of rare and endangered forms dated 1971).

CONTRIBUTORS

Contributions are not restricted to members of the Club. They should be addressed personally to the Editor, C. W. Benson, Department of Zoology, Downing Street, Cambridge. Contributions are accepted on condition that sole publication is offered in the first instance to this *Bulletin*. They should be type-written, double-spaced, with wide margins, on one side of the paper, and submitted in duplicate.

References to literature should be in the same format as in the notice to contributors to the *Ibis* (see any 1971 number). Considerations similar to those in the *Ibis* notice also apply in regard to nomenclature, scientific names of species and genera, and illustrations including photographs. But illustrations including photographs can only normally be considered if the contributor is willing to pay for the cost of their reproduction.

Contributors introducing a new name or describing a new form should append *nom. nov., sp. nov., subsp. nov.* as appropriate. In such a description, the introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further headings as required.

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CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, R. E. F. Peal, 24 Creighton Avenue, London N.10.

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Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 92 Nos. 3 & 4 Published: 21st August, 1972

The six hundred and seventy-sixth meeting of the Club was held at the Criterion in Piccadilly, London, S.W.1, on Tuesday, 9 May, 1972 at 7 p.m.

Chairman: Sir Hugh Elliott; present: 17 members and 8 guests.

Dr. A. W. Diamond addressed the Club on the biology of Aldabra seabirds and illustrated his talk with coloured slides.

The six hundred and seventy-seventh meeting of the Club was held at the Café Royal, 68 Regent Street, London, W.1, on Tuesday, 18 July, 1972 at 7 p.m.

Chairman: Sir Hugh Elliott, Bt., O.B.E.; present: 17 members and 13 guests.

The speaker was Mr. P. Z. McKenzie, M.B.E., M.R.C.E.S., who addressed the Club on nature conservation in the Isles of Scilly and illustrated his talk with coloured slides.

21 AUG 1972

Annual General Meeting

The eightieth Annual General Meeting of the British Ornithologists' Club was held at the Criterion in Piccadilly on Tuesday, 9 May, 1972 at 6 p.m., with Sir Hugh Elliott in the Chair.

Twelve members were present.

The Minutes of the 1971 Annual General Meeting (*Bull. Brit. Orn. Cl.* 91: 89–90) were approved and signed.

Presenting the Report of the Committee, the Chairman referred to the *Bulletin* back number situation. There were still a surprising number of copies of pre-1930 issues, but many gaps, whereas gaps in issues subsequent to 1930 were comparatively few. Long series could only be sold when gaps in the stock had been filled and, as a trial, an order had been given for the reprinting by photography of 60 copies of Vol. 88, No. 7 at a cost of £30, which amount had been lent to the Club for this purpose. If the reprints proved satisfactory, other issues out of print could be dealt with as and when the Club funds permitted. He estimated future income from sale of back numbers at £100–120 a year: there was one order worth about £200 which could be fulfilled when a complete series became available. He added that he would welcome any copies of the *Bulletin* which members might no longer need.

In the course of discussion of the annual accounts, the Hon. Treasurer stated that the increased rent for the Club's property at Tring should bring in an additional £80 in 1972. He reported that the item "Miscellaneous Expenditure and Postage" included a charge by the Auditors of £35 for preparing the accounts in addition to their audit fee of £21 and the Committee was authorised to consider possible ways of reducing or avoiding these charges.

The adoption of the Report of the Committee and Accounts for 1971 was proposed by Dr. J. F. Monk, seconded by Dr. G. Beven and passed unanimously.

In view of a further 10% increase in printing and distribution charges for the *Bulletin*, which the Chairman reported to the Meeting, the Committee was authorised to explore and, if desirable, implement in 1973 a proposal to place the publication of the *Bulletin* on a quarterly basis, instead of six times a year, in order to offset in part the increased cost, which would be of the order of £90 a year. This was on the understanding that the total number of pages of the *Bulletin* would be maintained. However, the possible consequential reduction in the number of Club meetings was not generally favoured, since it might discourage membership, although a change of rules would be involved if the number were kept at six, as at present.

The Hon. Secretary reported that letters had just been received stating that the Criterion might close shortly. Bookings by the Club for meetings on 19 September 1972, 21 November 1972 and 16 January 1973, would be transferred to the Cafe Royal on the same terms.

There being no nominations additional to those of the Committee, the following elections were made:

Hon. Secretary:	Mr. R. E. F. Peal (re-elected)
Hon. Treasurer:	Mr. P. Tate (re-elected)
Committee:	Mr. P. Hogg.

The Chairman thanked Mrs. J. D. Bradley for her services as a member of the Committee, from which she retired by rotation.

The meeting closed at 6.30 p.m.

Variation in tarsal and other measurements in *Otis denhami*, with some distributional notes

by C. W. Benson & Michael P. Stuart Irwin

Received 7th February 1972

INTRODUCTION

Benson & Irwin (1968: 45–46), following up an earlier investigation (Irwin & Benson 1967: 2–5), were able to demonstrate that certain populations of *Otis denhami* inhabiting high altitude grasslands show a rather striking reduction in the length of the tarsus, other populations inhabiting savanna at generally lower levels being not so adapted. Such high altitude birds were listed from the Nyika Plateau and are now also known to occur elsewhere to the north and west of Lake Malawi, and again from the highlands of Rwanda and Burundi. It was also suggested tentatively that birds from the latter area might have shorter bills.

In the earlier paper standard measurements of a large body of material from various museums were given for wing, tail, tarsus and culmen from the skull. In the second paper, based only on material in the Musée Royal de l'Afrique Centrale, Tervuren, figures were also provided for the culmen taken from the posterior edge of the nostril slit and considered to be the more accurate method of measurement. In the present investigation all five standard measurements from some more recently available material are given in Table 1. These and all the previously published figures are now compounded in Table 2. Especially important to this study are three further specimens from the Nyika Plateau in the National Museum, Bulawayo (Jackson 1971: 3) and another from Njombe in the Iringa Highlands in southern Tanzania (Sassi & Zimmer 1941: 264) in Vienna. Cognisance is also taken of two other specimens, one in Bulawayo and the other in Cambridge, England, and the types of *O. d. denhami* and *O. d. stanleyi* in the British Museum (Natural History).

TABLE 1

Measurements of additional material of *Otis denhami* not in Irwin & Benson (1967: 2–5) nor Benson & Irwin (1968: 45–46)

Locality	*Date*	*Altitude*	*Sex*	*Wing*	*Tail*	*Culmen*		*Tarsus*	*Location of specimen*
						from skull	*from posterior of nostril*		
O. d. jacksoni									
TANZANIA									
Njombe	24. 6.37	*c.* 6,000′	♀	497	254	—	—	130	Vienna
MALAWI									
Nyika Plateau	12.11.70	7,400′	♂	595	328	78	58	153	Bulawayo
	11.11.70		♂	602	318	82	60	155	
	11.11.70		♀	473	250	69	48	125	
ZAMBIA									
Luakela River, Mwinilunga	20.12.39	*c.* 4,500′	♂	604	333	85	62	176	
BOTSWANA									
Nxai Pan	22. 3.67	3,000′	♀	442	240	68	50	129	
Kwando River	21. 2.70		♀	464	228	64	50	131	
O. d. stanleyi									
(type) from "Cape of Good Hope"	—	—	♀	451	229	73	54	—	London
"South Africa"	—	—	♀	455	220	67	49	144	Cambridge
O. d. denhami									
(type) from Lake Chad	—	—	♂	—	326	105	76	185	London

TABLE 2

Combined measurements of all the material of *Otis denhami*

	Sex	*Wing*	*Tail*	*Culmen*		*Tarsus*	$100 \times \frac{\textit{tarsus}}{\textit{wing}}$
				from skull	*from posterior of nostril*		
O. d. denhami Sierra Leone to Ethiopia	♂♂	8: 584–655 (609.1)	10: 244–380 (300.9)	10: 90–105 (98.5)	10: 69–76 (72.0)	9: 160–185 (173.6)	28.5
	♀♀	10: 472–530 (503.1)	10: 201–312 (257.3)	6: 79–87 (83.8)	6: 56–65 (60.5)	9: 125–158 (141.1)	28.0
O. d. jacksoni East Africa (non-montane)	♂♂	9: 520–615 (578.6)	9: 190–305 (267.8)	9: 75–89 (79.8)	9: 55–63 (60.0)	8: 156–176 (165.5)	28.6
	♀♀	10: 440–494 (476.5)	10: 186–270 (230.8)	9: 63–82 (68.5)	9: 49–54 (50.6)	10: 132–142 (136.4)	28.6
O. d. jacksoni S. Zaire, Zambia, Botswana (non-montane)	♂♂	9: 532–604 (564.4)	7: 272–333 (300.5)	8: 77–99 (88.0)	8: 57–70 (62.0)	8: 161–182 (170.0)	30.1
	♀♀	10: 442–525 (471.3)	10: 220–306 (251.6)	10: 62–86 (73.5)	10: 50–62 (52.8)	10: 129–149 (136.0)	28.9
O. d. jacksoni Rwanda and Burundi (montane)	♂♂	4: 555–590 (580.2)	4: 300–322 (308.7)	6: 80–92 (87.5)	6: 58–65 (60.3)	4: 151–156 (153.2)	26.4
	♀♀	4: 458–487 (473.2)	4: 227–280 (256.0)	4: 72–74 (72.5)	4: 49–53 (50.7)	4: 124–130 (126.2)	26.7
O. d. jacksoni S. Tanzania, Nyika (montane)	♂♂	3: 595–603 (600.0)	3: 318–328 (322.6)	3: 78–83 (81.0)	3: 57–60 (58.2)	3: 152–155 (153.3)	25.5
	♀♀	4: 470–497 (480.0)	4: 225–280 (252.2)	3: 68–71 (69.3)	3: 48–51 (49.6)	4: 125–130 (128.7)	26.8
O. d. stanleyi South Africa	♂♂	4: 554–570 (559.7)	4: 282–324 (302.5)	4: 77–89 (82.7)	4: 55–63 (57.5)	4: 158–163 (161.0)	28.8
	♀♀	5: 444–492 (464.8)	4: 220–279 (248.2)	7: 58–73 (65.7)	7: 49–56 (50.8)	5: 130–145 (138.8)	29.9

GENERAL REMARKS

Some comments on the categories and geographical arrangement of the material summarised in Table 2 are necessary. Geographical variation in colour in this species is not particularly well-marked and in the recognition of the three races we follow White (1965: 111–112). The major differences are in the intensity of the rufous colour on the hind-neck, pale in *O. d. denhami* which ranges from Sierra Leone eastwards to the Sudan and western Ethiopia and the savannas north of the main Zaire forest belt. *O. d. jacksoni* has the rufous on the hind-neck darker and occurs from Kenya and Uganda southwards through Tanzania and south of the main Zaire forest belt, to Zambia, Angola and Botswana. *O. d. stanleyi* of South Africa has the rufous on the hind-neck paler still but more extensive. Apart from such colour differences there is a good deal of variation in size, *denhami* being the largest form with *jacksoni* and *stanleyi* considerably smaller. More complex however is the situation as discussed below within the *jacksoni* group of populations in which two montane groups show in particular a reduction in the length of the tarsus at high altitudes. However, as in many large birds there is much individual variation in size and measurements and this in particular would seem to apply to weights as already given by Benson & Irwin and Irwin & Benson (*cit. supra*).

In re-assembling the mensural data from these various sources, some explanation is necessary as to the individual allocation of specimens to their respective races and geographical areas. Those given in the earlier contributions are straightforward and fall within the geographic ranges of the three forms as outlined above. The material in Tervuren is divided as follows: that listed from Aba, Buta, Mauda and Niangara is from north of the forest belt in the Uelle District and is referable to *denhami*, while that from Kansenia, Kasenga, Kinda and Luombwa, in the Katanga and the Luluabourg Districts south of the main forest belt, is referable to *jacksoni*, as is also that from Kinshasa and the Congo River mouth. Cave & MacDonald (1955: 125) mention that specimens from the extreme south-eastern part of the Sudan appear to be intermediate in the colour of the hind-neck between *denhami* and *jacksoni*, but the nature of our material is such that we see no reason to diverge from White, who does not mention any intergradation. Gene-flow may nevertheless occur between these two races around the Uganda/Sudan border. The figures given by Chapin (1939: 50) for wing, tail and tarsus for *denhami* in the American Museum of Natural History have also been incorporated, but not the culmen measurements which are unusually small and may have been derived from the exposed part and not from the base.

It should also be noted that in Table 2, the number of measurements for the different components tends to vary, those for the culmen usually being in excess of the others. This derives from the nature of the material, some elements of which are damaged or unmeasurable. In several instances, too, only heads have been preserved.

MONTANE POPULATIONS

Keay (1959) shows the montane grassland communities where this species occurs, apparently more or less as an isolate from those of savanna, and largely above 5,000 feet. In Rwanda and Burundi it is little documented from the ecological standpoint, but the localities from which it has been recorded are listed by Schouteden (1966a: 39; 1966b: 26). On the elevated Nyika Plateau it is relatively common between 6,500–8,000 feet (see the following paper by V. J. Wilson) and is present also on the Vipya Plateau at between

6,000–7,000 feet, but apparently it may at times wander in the non-breeding season to considerably lower altitudes. A second highland population occurs at no great distance to the north and west of Lake Malawi in southern Tanzania where it has been recorded by Lynes (1934: 49), Sassi & Zimmer (*op. cit.*) and Haldane (1956: 10). The only specimen of this deme, from Njombe, agrees in size with that from the highlands to the west of Lake Malawi (Nyika and Vipya Plateaux) and accordingly they are treated together. Such highland populations may well have evolved in isolation and are largely sundered under present-day climatic conditions. Nevertheless during the late pleistocene, perhaps as recently as 18,000 years ago, they would have had available a far greater area of montane grassland (Moreau 1966: 47). Such highland grassland eco-types within the species may therefore be of relict distribution.

SIZE VARIATION

In Table 2, despite the rather limited material and the often considerable variation in size shown by many large birds, some definite trends are apparent and perhaps most markedly so in the length of the tarsus. Nominate *denhami* is known to be the largest form and this is borne out well in the table. The savanna populations of *jacksoni* in east and south-central Africa and that of *stanleyi* in South Africa average somewhat smaller in size, more especially in the wing length, although *stanleyi* would also seem to have a slightly shorter bill and tarsus and is perhaps as a whole a somewhat smaller bird than *jacksoni*. There may accordingly exist a general cline with a decrease in size from the northern savannas through eastern and southern Africa.

The most obvious difference as stressed in our two earlier papers remains that of the tarsus in the populations inhabiting high-altitude grasslands. On the other hand the reduction in the length of the bill, considering even the culmen from the posterior of the nostril, is at best very slight. The three males from the Nyika Plateau are certainly long-winged and those from Rwanda and Burundi are also above the general average, but this in part may reflect the nature of the sample as there is a good deal of overlap between the various sets of figures. The tarsal measurements would seem to carry the greatest significance and show that there is an undoubted reduction in length, more especially if this is taken proportionately to that of the wing. Thus if the figures for the tarsus of the montane and non-montane populations of *jacksoni* are combined a clear comparison is obtained as is shown by the following figures:

Tarsus	♂♂	♀♀
montane	7: 151–156 (153.2)	8: 124–130 (127.5)
non-montane	16: 156–182 (167.7)	20: 129–149 (138.7)

The ratio of tarsus to wing length (see Table 2) also shows a lower figure in the montane samples of *jacksoni* than in any of the others, including nominate *denhami* and *stanleyi*.

The reason for this reduction in the length of the tarsus is uncertain and the most obvious solution would seem to be to invoke Allen's Rule involving the reduction of the extremities as bill and leg lengths in colder climates. However it is to be wondered if this postulate can really be applied to what is merely a temperate grassland especially as there is no appreciable reduction in bill length. Another possible explanation may be sought for this reduction, indeed perhaps of all the leg elements, as a means of easier locomotion over hilly terrain. Such a reduction in the overall length of the leg may well assist in the tractive effort required by such a large and heavy terrestrially feeding bird, dependent for its food on the degree of mobility on the ground.

STATUS IN BOTSWANA AND RHODESIA

Smithers (1964) does not list *O. denhami* from Botswana, although Roberts (1935: 70) visually recorded it from "beyond the Chukudu River" on 7 April in the south-west Kalahari. According to his map this would be at about 22° 27′ S., 23° 25′ E. The specimens listed in Table 1 from Nxai Pan at *ca* 19° 45′ S., 24° 45′ E. and the Kwando River at *ca* 18° 10′ S., 23° 16′ E. are therefore the first material records from that country. They are indistinguishable in colour from *O. d. jacksoni* and must be referred to that subspecies rather than to *O. d. stanleyi* of South Africa. The two forms would in any case appear to be discontinuously distributed with *jacksoni* perhaps occurring regularly north of 20° S., and *stanleyi* not normally except as a wanderer outside of the Republic of South Africa. It therefore seems unlikely that there is any gene-flow between the two forms at the present time and that *stanleyi* is a geographical isolate.

Whether or not *O. denhami* breeds in Botswana remains to be determined. Benson *et al.* (1971: 95), supplemented by V. J. Wilson's paper which follows, give egg-laying in November, December, January, February, July and August in Zambia so that the breeding season must be an extended one and non-breeding birds or sub-adults may wander considerably. Such a very large bird, too, is unlikely to breed until it is several years old (see particularly the examples and discussion in Amadon 1964: 105–110).

O. d. stanleyi is often stated in the literature to undergo movements in South Africa, although their precise nature never appears to have been fully documented. Clancey (1967: 202) merely states that it is resident but subject to winter movement and this is probably correct. Lynes (1925: 555) also reported movements of nominate *denhami* in the Darfur Province of the Sudan with a marked northward migration there from June to August. Similarly Chapin (1939:50) reported that in the Uelle District of Zaire it arrives at Faradje and Niangara towards the onset of the dry season before the grass has been burned, apparently benefitting from the grass fires later in the season which open up much suitable habitat, permitting the birds to breed. Jackson & Sclater (1938: 325) record as many as fifty *jacksoni* attracted to recently burnt ground near Lake Nakuru in Kenya, so perhaps everywhere it may tend to search for areas where such open conditions exist, whether on burnt ground or otherwise. The movements of *stanleyi* in South Africa and perhaps also of *jacksoni* may not however be strictly analogous and much further investigation is necessary. But all three races would appear to partake in some sort of movement. The montane populations however may be more sedentary with only some local downward wandering. The birds occurring in northern Botswana are therefore in all probability either part of, or derived from, the population occurring in the Southern and Western Provinces of Zambia, where it is local but relatively widespread, or from adjacent south-eastern Angola.

Where it does occur in Botswana it does so alongside the still larger *O. kori*. *O. denhami* in fact completely replaces *kori* in Zambia, while the latter occurs over the greater part of Botswana. Otherwise over most of their ranges the two species are mutually exclusive geographically, this largely applying in South Africa (McLachlan & Liversidge 1970: 148). But an off-season overlap is not really unexpected in northern Botswana where their ranges meet. Prof. D. L. Birkenholz who obtained the Nxai Pan specimen reported (pers. comm. to M.P.S.I.) that several *denhami* were present and that both species could be seen on the open grass plains that surround the pan. Local Africans and Bushmen in the Okavango Delta were further reported to be aware of the existence of two large species of bustard there. The two can apparently co-exist in places but much further investigation is required as to their mutual ecology and it is not known if they will breed in the same area. Certainly in northern Botswana as a whole *O. denhami* is sparse and local whereas *O. kori* is widespread.

In Rhodesia Smithers *et al.* (1957) had no record of its occurrence. However various unsubstantiated reports have recently indicated that *O. denhami* might occur regularly in parts of north-western Matabeleland. Confirmation came when a solitary bird, apparently a male, appeared at the Main Camp airstrip in the Wankie National Park. It was first seen in early December 1971 and was still present there in late April 1972. It has been observed by many interested persons, and thanks to Mr. H. J. Herbert of the Research Branch of the Department of National Parks and Wildlife Management, we have been able to examine a colour slide and confirm the identification. While this bird was present at Main Camp, another was reported during December 1971 from the Victoria Falls Airport. Although the identification in this instance was not confirmed, there seems little reason to doubt it. The general remarks above in regard to its status in Botswana would apply equally to any birds that may occur in immediately adjacent western Rhodesia, this general area in many respects being ecologically very similar.

SUMMARY

Measurements indicate that the tarsus is relatively short in montane populations of *Otis denhami jacksoni*, in comparison with other populations of the species as a whole. The reduction might be an adaptation to a hilly terrain. *O. denhami* is recorded for the first time from Botswana (specimens, *O. d. jacksoni*) and western Rhodesia (visually), possibly as an off-season visitor from further north. *O. kori* was already well-known in both countries. In general the two species are mutually exclusive.

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References:

Amadon, D. 1964. The evolution of low productive rates in birds. *Syst. Zool.* 18 (1): 105–110.
Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. S. 1971. *The birds of Zambia.* London: Collins.
Benson, C. W. & Irwin, M. P. S. 1968. Taxonomic notes on Congolese birds. *Rev. Zool. Bot. Afr.* 77 (1/2): 44–49.
Cave, F. O. & Macdonald, J. D. 1955. *Birds of the Sudan.* Edinburgh: Oliver & Boyd.

Chapin, J. P. 1939. The birds of the Belgian Congo. *Bull. Amer. Mus. Nat. Hist.* 75.
Clancey, P. A. 1967. *Gamebirds of southern Africa.* Cape Town: Purnell.
Haldane, L. A. 1956. Birds of the Njombe District. *Tanganyika Notes and Recs.* 44: 1–27.
Irwin, M. P. S. & Benson, C. W. 1967. Notes on the birds of Zambia: part 3. *Arnoldia (Rhodesia)* 3 (4).
Jackson, H. D. 1971. Ornithological results of the 1970 National Museums of Rhodesia expedition to Malawi. *Arnoldia (Rhodesia)* 5 (12).
Jackson, F. J. & Sclater, W. L. 1938. *The birds of Kenya Colony and the Uganda Protectorate.* Vol. I. London: Gurney & Jackson.
Keay, R. W. J. (Ed.). 1959. *Vegetation map of Africa.* London: Oxford University Press.
Lynes, H. 1925. On the birds of north and central Darfur. Part 5. *Ibis* (12) 1: 541–590.
— 1934. Contribution to the ornithology of southern Tanganyika Territory. *Journ. Ornith.* 82. Sonderheft.
McLachlan, G. R. & Liversidge, R. 1970. *Roberts birds of South Africa*, 3rd ed. Cape Town: John Voelcker Bird Book Fund.
Moreau, R. E. 1966. *The bird faunas of Africa and its islands.* London: Academic Press.
Roberts, A. 1935. Scientific results of the Vernay-Lang Kalahari Expedition, March to September 1930. Birds. *Ann. Transv. Mus* 16 (1): 1–185.
Sassi, M. & Zimmer, F. 1941. Beiträge sur kenntnis der vögelwelt des Songea-Distriktes mit besonderer Berucksichtigung des Matengo-Hochlandes. *Ann. Naturhist. Mus. Wien* 51: 236–346.
Schouteden, H. 1966a. La faune ornithologique du Rwanda. *Mus. Roy. Afr. Centr. Zool. Doc.* No. 10.
— 1966b. La faune ornithologique du Burundi. *Mus. Roy. Afr. Centr. Zool. Doc.* No. 11.
Smithers, R. H. N. 1964. *A check list of the birds of the Bechuanaland Protectorate and the Caprivi Strip.* Salisbury: Trustees of the National Museums of Rhodesia.
Smithers, R. H. N., Irwin, M. P. S. & Paterson, M. L. 1957. *A check list of the birds of Southern Rhodesia.* Salisbury: Rhodesian Ornithological Society.
White, C. M. N. 1965. *A revised check list of African non-passerine birds.* Lusaka: Government Printer.

Notes on *Otis denhami jacksoni* from the Nyika Plateau

by Vivian J. Wilson

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The Nyika Plateau lies in the northern part of Malawi with a very small section of approximately 29 sq. miles on the eastern edge of Zambia. The area in Malawi is about 750 sq. miles. The plateau consists of high rolling grassland at an altitude of from approximately 6,500 to 8,500 feet above sea level. At the heads of many of the streams and dambos are relic patches of virgin evergreen forest. The rainfall on the plateau averages about 45 inches per year, but as much as 70 inches has been recorded on the eastern section (Stewart & Wilson 1966). About 90% of the rain falls between December and April. I visited the area on many occasions between January 1955 and October 1964, during which time a number of observations were made on the bustard *Otis denhami*. In the ensuing notes, localities in Zambia can be found in Benson *et al.* (1971), except the Chikaya Plains, at ca. 12° 35′ S., 32° 00′ E.

Distribution: Benson *et al.* (1971) mention that in eastern Zambia *Otis denhami* is known only from the Nyika Plateau and from near Nyimba and has not been recorded from the Luangwa Valley, where nevertheless there are some suitable plains. I have seen it in the Luangwa Valley on three occasions, in May, June and August, and in each instance on the Chikaya Plains in the northern part of the South Luangwa Game Reserve. A pair was seen by the Game Ranger of the area, Mr. Peter Whitehead, and myself in August, and on each of the other two occasions single birds were present.

The species has also been seen by me in the open dambo country of the Lukusuzi Game Reserve between the Nyika Plateau and Chipata to the south, in June 1962, and again to the south in the Chipengali area, in August 1959. Benson (1953) mentions that there is some downward movement of the species from June–August, when it becomes rare or absent on the Vipya Plateau in northern Malawi. From records of numbers and group sizes seen on the Nyika Plateau by me over a period of nine years, it appears that some of the population leave the plateau during the cold winter months and move to lower ground. The other Zambian records mentioned above were all during the period May to August, at 2,000–3,000 feet a.s.l. However the Luangwa records should be regarded with caution as it is only possible to visit the Chikaya Plains during the dry season and no visits were made by me to these plains during the rainy season (November–April).

Breeding: The nest consists merely of a scrape in the ground and in seven of the eight nests located, they were situated between several tufts of recently sprouted green grass. Six were in open grassland along the crests of rolling hills, the seventh was in bracken at the edge of a patch of montane forest, while the eighth (not between tufts of grass) was on a rocky outcrop. In the case of the last, a number of small stones lay at the edge of the nest. Apparently these had not been collected but had been removed from the centre of the nest scrape.

Each nest contained two eggs, and they were found on the following dates: 11, 17 and 22 November; 12 December; 21 January; 18 March; 10 August and 30 October. It was during the period November to March that the birds appeared to be most active and plentiful on the Nyika, and each nest was located merely by watching the male with binoculars from a distance of about 500 yards. In each instance only the female appeared to incubate the eggs although McLachlan & Liversidge (1970) indicate that both sexes may do so in the race *stanleyi*. In two cases however both sexes were sitting at the nest and from a distance it was difficult to say which bird was on the eggs. It is quite possible that they were waiting to change over.

Benson *et al.* (1971) give egg-laying records for February (1) and July (2) in Zambia, and McLachlan & Liversidge (1970) mention October to December in South Africa. Mackworth-Praed & Grant (1952) give breeding in Nyasaland (Malawi) in March and probably November, although the original source of this information is not known. They give other data from nearer the equator, but owing to differences in seasonal regimes these are not relevant to this paper.

The colour of the eggs seen by me varied a great deal; not only from clutch to clutch but within a clutch. All had the same basic light brown colour but the extent and colour of the blotches varied a great deal. Some had large blotches of dark brown while two appeared to be smudged with olive-brown and one even had two large yellow-green smears on the obtuse end. Mackworth-Praed & Grant (1952) give the clutch-size as one or two in nominate *denhami* in eastern Africa but (1962) as two in southern Africa, thus agreeing with McLachlan & Liversidge (1970). Of the eight records from the Nyika all nests contained two eggs.

Only three of the eight clutches were measured, in millimetres as follows:

November 11	82 × 54	85 × 59
December 12	88 × 60	85 × 56
October 30	83 × 55	84 × 56

Mackworth-Praed & Grant (1952) give the size of the egg of nominate *denhami* as 85 × 55 mm, to which the Nyika eggs approximate, but McLachlan & Liversidge (1970) give an average of only 76.1 × 55.6 mm for *N. d. stanleyi.*

Flock size: The birds were seen on the Nyika Plateau on 65 occasions over a period of nine years, and the following data give an indication of the sizes of the flocks encountered (some were seen on more than one occasion during the same visit):

Single ♂		8
Single ♀		11
♂ and ♀		26
Two	(unsexed)	10
Three	,,	4
Four	,,	3
Five	,,	2
Seven	,,	1
		65

The group of seven was seen in October, just before the start of the rains, while 20 of the 26 sexed pairs were seen during November to March. The statement in Benson *et al.* (1971) that the species is usually seen singly or in pairs is certainly correct for the Nyika Plateau, but they mention flocks of up to a dozen and even one of 19. However on the Nyika, where the habitat is certainly ideal, my maximum is seven only.

Food: Mackworth-Praed & Grant (1952) give the food of nominate *denhami* as "largely insects, with a certain amount of vegetable matter and berries" while McLachlan & Liversidge (1970) say for *stanleyi* "large insects, vegetable matter and small animals: in fact almost anything." In 1962 I collected a male *jacksoni* on the Nyika and a complete analysis of its stomach contents was given by Benson & Irwin (1964: 121), 39% consisting of animal matter, 28% plant, 14% mineral and 19% unidentified.

During one of my recent visits to the Nyika the stomach contents of three further specimens were retained. These specimens are detailed by Jackson (1971). No attempt was made to assess percentages of the contents of each stomach, and the qualitative data which now follow simply show the actual contents. The insects in the animal matter were identified by Dr. E. C. G. Pinhey, the remainder by myself.

1. ♂, Nyika, 11 November 1970.

(1) Animal matter.

Coleoptera.

Tenebrionidae. *Adesmia* sp. (many).

Curculionidae. *Brachycercus* sp. (many); another weevil (few).

Staphilinidae. One rove beetle, and indet. miscellaneous pieces.

Scarabeidae (Cetoniinae). One *Oxythyrea haemorrhoidalis* Fabr.

Histeridae. *Macrolister validus* Er. (from jaws only, a few).

Hymenoptera.

Apidae. Parts of several bees.

Myriopoda.

One complete millipede.

(2) Plant matter.

Gramineae. One species (few).

Compositae. Flower heads (many).

Hard seeds. Many (indet.).

2. ♂, Nyika, 11 November 1970.

(1) Animal matter.

Coleoptera.

Tenebrionidae. *Adesmia* sp. (very few).

Curculionidae. *Brachycercus* sp. (very many).

Lepidoptera.

One small moth larva.

Hemiptera.

Coreidae. *Anoplocnemis* sp. (one specimen plus some pieces).

Hymenoptera.

Pompilidae. One female spider wasp.

Reptilia.

Head and 3 cm of neck of *Duberria lutrix shirana* (Boulenger).

(2) Plant matter.

Gramineae. Several spp.

Compositae. Flower heads (few).

Small shoots with fragments of dicotyledon (many).

3. ♀, Nyika, 11 November 1970.

(1) Animal matter.

Coleoptera.

Tenebrionidae. Portion of one specimen.

Curculionidae. *Brachycercus* spp. (two of one sp., many of another); *Episus* and *Bothynoderes* sp. (one specimen of each).

Meliodae. *Mylabria* sp. (one specimen).

Hemiptera.

Pentatomidae. *Dalsira* sp. (part of thorax only).

Orthoptera.

Acridiidae. Two nymphs.

Myriopoda.

Fragments of two spp.

Reptilia.

One whole skink *Mabuya varia nyikae* Loveridge.

(2) Plant matter.

Compositae. Flower heads with peduncles attached (many).

Small shoots with leaf fragments (few).

Indet. monocotyledon (many).

Summary: A number of recent records of the occurrence of the bustard *Otis denhami jacksoni* in eastern Zambia are presented, including also eight egg-laying records from the high Nyika Plateau. These latter fall within the period August/March, and in each the clutch-size was two. This may be the only breeding locality in eastern Zambia, occurrences at lower levels being probably of off-season visitors. The largest flock recorded on the Nyika was seven, but greater numbers have been found in Zambia as a whole. Details are given of the stomach-contents of three specimens.

Acknowledgements: Assistance in the finalisation of the draft of this paper was rendered by C. W. Benson and R. K. Brooke.

References:

Benson, C. W. 1953. *A check list of the birds of Nyasaland.* Blantyre & Lusaka: Nyasaland Society & Publications Bureau.

Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. Stuart. 1971. *The birds of Zambia.* London: Collins.

Benson, C. W. & Irwin, M. P. Stuart. 1964. Some additions and corrections to a *Check list of the birds of Northern Rhodesia. Occ. Papers Nat. Mus. S. Rhod.* 27B: 106–127.

Jackson, H. D. 1971. Ornithological results of the 1970 National Museums of Rhodesia expedition to Malawi. *Arnoldia (Rhodesia)* 5 (12): 10 pp.

Mackworth-Praed, C. W. & Grant, C. H. B. 1952. *African handbook of birds*, Series I, Vol. I. London: Longmans.

— 1962. *African handbook of birds*, Series II, Vol. I. London: Longmans.

McLachlan, G. R. & Liversidge, R. 1970. *Roberts birds of South Africa*, 3rd ed. Cape Town: John Voelcker Bird Book Fund.

Stewart, M. M. & Wilson, V. J. 1966. Herpetofauna of the Nyika Plateau (Malawi and Zambia). *Ann. Natal Mus.* 18 (2): 287–313.

The type locality of *Campethera cailliautii fuelleborni*

by R. J. Dowsett

Received 13th March 1972

The woodpecker *Campethera cailliautii fuelleborni* was described by Neumann (1900), with type locality "bei Langenburg am Nyassa See". In the standard literature this type locality is variously described; for example "Langenburg, N.E. shore L. Nyasa" (Chapin 1939; Clancey 1965) and "Tukuyu, south-western Tanganyika Territory" (Mackworth-Praed & Grant 1952; White 1965). But the type locality is *not* Tukuyu, and there is no longer a locality called Langenburg. Haldane (1956) correctly pointed out that the type locality of this race must have been Alt-Langenburg (now called Lumbira or Lumbila) on the north-east shore of the lake, rather than Neu-Langenburg (now known as Tukuyu).

Shann (1960, 1962) showed that the headquarters of Langenburg district were founded in 1893 at Lumbira, which is about 80 km south-east of Tukuyu, on the north-east shore of the lake. Some time between 1893 and 1900 they were moved to a site near Mwaya, on the north-west shore, and in 1900 to Neu-Langenburg (called Tukuyu from 1920). Thus it is clear that Neumann's locality Langenburg must refer to either Lumbira or Mwaya.

However, there is no evidence that Mwaya was ever called Langenburg, in spite of being the district headquarters. A number of contemporary German and British maps have been examined in the library of the National Museums of Zambia at Livingstone. Pre-1914 German maps of Deutsch-Ostafrika clearly show Neu-Langenburg (Tukuyu), Mwaya and Alt-Langenburg (Lumbira). A British ordnance survey map of 1916 shows Old Langenburg on the north-east shore of the lake, at the mouth of the Ludjangala River, at about 9° 36′ S., 34° 10′ E. I consider therefore that the type locality of *Campethera cailliautii fuelleborni* is correctly:

> *near Lumbira (= Old Langenburg), north-east shore of Lake Malawi (= Lake Nyasa), Tanzania at about* 9° 36′ *S.,* 34° 10′ *E.*

This problem has raised two interesting points. One is that towns and particularly villages in Africa frequently move position over the years whilst retaining their old name (often the name of a chief or headman). The other is that, whereas the changing of geographical names by governments in Africa may be confusing to the zoologist, it is even more confusing if both old and new names are not quoted in zoological writings.

References:
Chapin, J. P. 1939. The birds of the Belgian Congo: Part 2. *Bull. Amer. Mus. Nat. Hist.* 75: 571.
Clancey, P. A. 1965. A catalogue of birds of the South African sub-region: Part 2. *Durban Mus. Novit.* 7 (10): 305–388.
Haldane, L. A. 1956. Birds of the Njombe district. *Tang. Notes & Recs.* 44: 1–27.
Mackworth-Praed, C. W. & Grant, C. H. B. 1952. *African handbook of birds*, Series I, Vol. 2. London: Longmans.
Neumann, O. 1900. (No title). *Journ. Ornith.* 48: 204.
Shann, G. N. 1960. Tanganyika place names of European origin. *Tang. Notes & Recs.* 54: 79–88.
— 1962. Tanganyika place names of European origin. *Tang. Notes & Recs.* 58/59: 283–284.
White, C. M. N. 1965. *A revised check list of African non-passerine birds.* Lusaka: Government Printer.

Plumage aberrations in *Niltava sundara* Hodgson

by E. C. Dickinson

Received 15th February 1972

In the course of a recent study of the above species and its nearest relatives 333 sexed skins of this species were examined – 201♂♂ and 132♀♀. The plumage of the two sexes is totally different: males are bright blue above with shining patches on the forehead and on the carpal area of the wing and orange below but for the chin, throat and breast which are very dark blue; the females are brown, somewhat paler and greyer below with a crescent shaped white gorget on the upper breast – blue is totally lacking and orange only present in the undertail coverts of the population of the Malay peninsula and Sumatra, which the above mentioned study (Dickinson 1972) recommended be treated as a separate species.

Plumage aberrations were noted in 21 skins. These can be divided into two groups, each of which in turn contains two sub-groups:

Apparent sex by plumage not agreeing with sex annotated by collector—	
apparent females sexed as males	6
apparent males sexed as females	7
Isolated outcropping of inappropriate characters—	
male feathering in females	6
displaced characters in male dress	2

Apparent sex by plumage not agreeing with sex annotated by collector

It is clear that errors can genuinely occur and where native skinners have been employed it is not uncommon to find them, though where a species is as strongly dimorphic as this one the occurrence is rarer.

(a) *Apparent females sexed as males:* Of the six such skins found one each has been collected by or for George Forrest, Walter Koelz and S. Dillon Ripley and one label not only says "♂" but adds "T.N.E." – testes not enlarged.

Material involved: British Museum (Nat. Hist.) 1921.7.15.486, 1923.11.11.340
Field Mus., Chicago 241880
U.S. Nat. Mus. 296394, 336858, 390534

(b) *Apparent males sexed as females:* None of the seven skins is very recent, three were collected by Dr. J. F. Rock – who was primarily a botanist and doubtless relied heavily on native skinners – as was one of the apparent females, and two are still largely in juvenile plumage.

Material involved: British Museum (Nat. Hist.) 1886.4.1.4134, 1921.7.15.485
Paris C.G. 1895 – 1547
Am. Mus. Nat. Hist. 605713
U.S. Nat. Mus. 296331, 296335, 296348

Isolated outcropping of inappropriate characters

(a) *Male feathering in females:* There are three which show shining blue feathers and three which show orange feathers. In each case the feathers were in positions where they would correctly occur in male individuals.

The birds showing blue were:

Brit. Mus. no number, collected by Major Godwin-Austen 15.2.1877: one shining blue feather on left scapulars, two on the crown.

Mus. Comp. Zool., Harvard 268911: with one blue rectrix and a patch on the left crown above and behind the eye of feathers with blue bases and greyish brown tips.

Mus. Comp. Zool., Harvard 266131: with one full blue crown feather on centre of crown, this bird having been collected on 29 May on its breeding ground.

The birds showing orange were:

Brit. Mus. Whistler Coll. No. 11038: one orange feather on the central abdomen.

Peabody Mus., Yale 64976: some small orange feathers on sides of breast.

Mus. Comp. Zool., Harvard 159554: one orange feather on upper breast.

The characteristics displayed by these six specimens tend to support a belief that not all thirteen specimens in these two groups are due to errors in sexing or labelling.

(b) *Displaced characters in male dress:* Two specimens in the British Museum, both males by label data and apparent plumage, and both collected in the Lichiang Range in September 1922, show orange – the same shade as on the abdomen – on blue-tipped central crown feathers. In one the orange is less apparent and this bird still has the feathers of the forecrown in pin.

Material involved: Brit. Mus. 1923.11.11.342, 1923.11.11.344.

Geographical considerations: It is certainly worth mentioning that 12 of the total of 21 skins were collected in Yunnan and belong to the race *N. sundara denotata* whilst a further three belong to the same race and were collected in its winter range.

Summary: Aberrations found in 21 specimens are grouped, listed and described; the evidence suggests but does not prove that some males wear female plumage and *vice versa;* other aberrations are not inter-sexual.

Reference:

Dickinson, E. C. 1972, in press. A study of the orange-breasted Niltavas represented on mainland S.E. Asia. *Nat. Hist. Bull. Siam Soc.*

The seasonal migrations of the Common Black Cuckoo-Shrike *Campephaga flava* Vieillot

by A. Prigogine

Received 28th February 1972

Among cuckoo-shrikes of the genus *Campephaga*, the form *flava* Vieillot is the most widely distributed (Hall & Moreau 1970: 52). It is a typical bird of open woodland, found throughout Africa south of the equator, excepting the equatorial forest and the arid south-west. North of the equator, it is found only in north-eastern Africa, especially near the eastern border of the Zaire, and in Uganda, Kenya, the southern Sudan, Ethiopia and Somalia.

Actually, *flava* exists in the most diverse biotopes, thus in coastal scrub, light woodland and gallery forest, and also in moist montane forest in East Africa and the eastern Zaire (Chapin 1953: 199). However, especially for the Zaire, this statement is too general. In fact I never found *flava* in the montane forests of the western ridge of the Western Rift Valley; nor to the west of Lake Edward, as at Lutunguru (the specimen of *flava* recorded from Ngereri-Lepi, near Lutunguru, by Verheyen 1947: 76, is in fact a male of *C. petiti*); nor again on the western slopes of Mount Kahuzi and in the Itombwe Mountains. All these forests, at altitudes above 1,400 m, are the normal habitat of *C. petiti*. On the other hand, Grauer collected a male of *flava* at 2,000 m on the eastern slopes of the Itombwe Mountains west of Lake Tanganyika, and Rockefeller & Murphy another male on Mount Kandashomwa, as high as 2,300 m. I believe that the absence of forest at lower altitudes accounts for these two records of *flava* from such relatively high altitudes. Indeed the slopes of the Itombwe Mountains down to the Ruzizi River and Lake Tanganyika are completely bare. Some specimens of *flava* have also been collected at Tshibati, at nearly 2,000 m. In this locality it apparently ascends to this high altitude to find more favourable conditions during the dry season. This may also apply to the montane forest of Idjwi Island, where my collectors found *flava* quite common between 1,700 and 1,950 m (Prigogine 1967: 264). But in other parts of the Zaire, as at Mount Kabobo (Prigogine 1960: 15, 30) and around Kamituga (Prigogine 1971: 132), all my specimens of *flava* were collected at altitudes no higher than 1,400 m, and it seems to avoid moist montane forest.

With the exception of Mount Kabobo, all my specimens from the region of Kamituga and from Idjwi Island correspond to the period from June to September, i.e. during the dry season in the southern Zaire. So for some years I have suspected that *flava* is a migrant, at least in certain parts of the Zaire (Prigogine 1967: 264; 1971: 132). Furthermore, according to unpublished notes which his wife kindly sent to me recently, Dr. J. P. Chapin supposed *flava* to be a dry season visitor in the Kivu, from the south or the east (Chapin 1960).

To settle the question I have studied the distribution of most specimens of *flava* from various parts of the Republics of the Zaire and of Rwanda by months of the year, as follows:

> 197 from Zaire and Rwanda, in the Musée royal de l'Afrique Centrale, Tervuren; 44 from Zaire, in the Institut royal des Sciences Naturelles, Brussels; 8 from the eastern Zaire (west of Baraka and on Idjwi Island, some considered to be intermediates between *flava* and *petiti*), collected by Grauer, and 8 mainly from Kivu, collected by J. P. and R. T. Chapin, all in the American Museum of Natural History; and one from Zaire, in the Zoologisches Museum an der Humboldt-Universitat zu Berlin.

All the above specimens were personally examined by myself. I have also taken account of the following further specimens of *flava:*

> 2 from Katanga (Reichenow 1902: 518) (two females collected by Bohndorff at Kasongo, mentioned in this reference, are in the American Museum of Natural History; a third specimen, a male, is in the Zoologisches Museum in Berlin).
>
> 1 from Mokia (Ogilvie-Grant 1910: 388).
>
> 3 from upper Katanga (Neave 1910: 132).
>
> 15 from eastern Zaire (Sassi 1916: 261).

2 from Kasenyi (Stone 1936: 564).
4 from Katanga (Lynes 1938: 76).
1 from Idjwi Island (Peters & Loveridge 1942: 244).
3 from Bwamba Forest (Friedmann & Williams 1971: 44).
23 in the American Museum of Natural History (from an unpublished list by J. P. Chapin; only specimens not examined by myself.)
7 collected by K. Curry-Lindahl, in the Institut de la Recherche Scientifique en Afrique Centrale (I.R.S.A.C.) at Lwiro (from an unpublished list by P. and I. Kunkel).
31 collected or ringed at Lwiro and Tshibati by P. and I. Kunkel (from an unpublished list kindly supplied by them).

The specimens from Mokia and the Bwamba Forest were collected in fact in Uganda, but close to the Zaire border.

The Table shows the distribution by months of 347 specimens of *flava*. I have also plotted on the map the various localities where it was found, an indication being given of the season corresponding to the records from the various localities.

TABLE

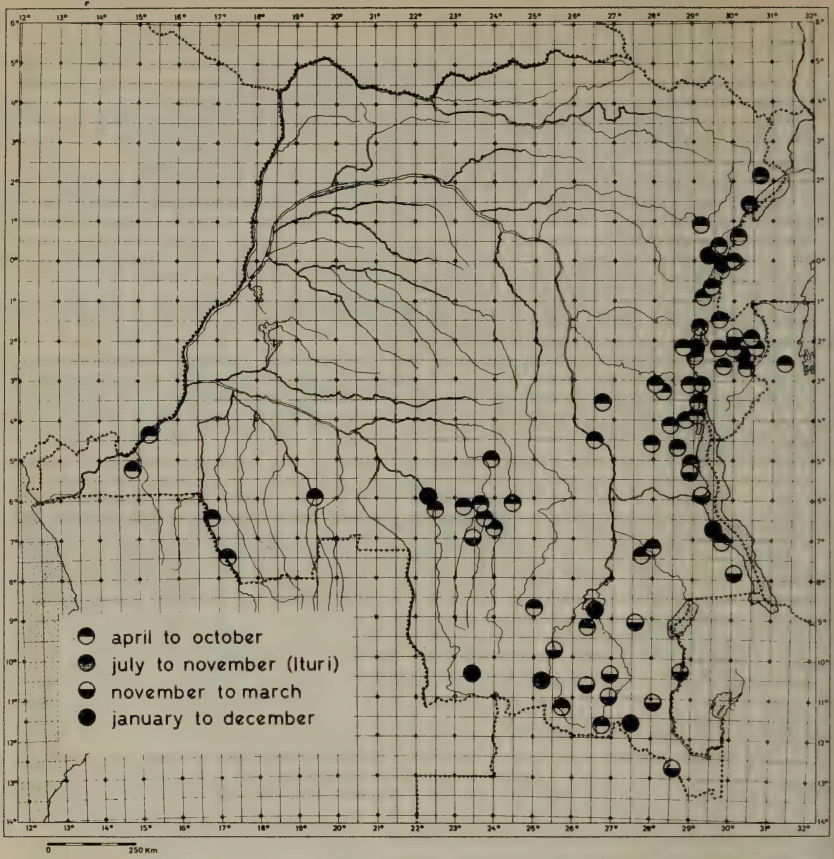
Distribution of specimens of *Campephaga flava* in the Zaire and in Rwanda by months

Region	*J*	*F*	*M*	*A*	*M*	*J*	*Jl*	*A*	*S*	*O*	*N*	*D*	*Total*
Katanga	8	10	18	5	11	11	11	17	9	11	11	3	125
Kasai	1	—	—	2	10	18	13	7	4	—	—	1	56
Kwango, Bas-Congo	—	—	—	—	—	2	1	2	1	—	—	—	6
Maniema	—	—	—	—	—	5	2	—	2	5	—	—	14
Southern Kivu (1)	—	—	—	1	1	12	13	17	18	8	—	—	70
Idjwi Island	—	1	—	—	—	1	9	—	—	—	—	—	11
Rwanda	1	—	—	1	1	3	7	6	2	2	—	2	25
Northern Kivu (2)	—	—	1	—	1	2	18	6	3	2	2	—	35
Lake Albert	—	—	—	—	—	—	1	2	1	—	1	—	5
Total (without Katanga)	2	1	1	4	13	43	64	40	31	17	3	3	222

(1) Kamituga, Itombwe, Lake Kivu (W. and N.).
(2) Lake Edward, Ruwenzori, Butembo.

While in the southern Zaire, especially in the Katanga, *flava* is present in every month, it can be seen that, with the exception of two specimens, all the records for the Kasai, Kwango and Bas-Congo fall into the period April/September. The two exceptions are a male from Luluabourg for 20 January and another male from Kaniki-Kapanga (in Mwene-Ditu, south-eastern Kasai) for 27 December. Normally the first *flava* arrive in the Kasai at the end of April (27 April at Kasansa, 29 April at Kabinda). The last leave there in September (13 September at Gandajika). It must be accepted that *flava* is normally absent from this part of the Zaire during October/March (with only two records for April, towards the end of the month).

Turning now to the Maniema and southern Kivu (Kamituga, Itombwe and the western and northern shores of Lake Kivu), the Table shows that almost all records fall within the period June/October. The only exceptions are an adult female collected by Grauer on the Ruzizi Plain on 23 May, and another adult female collected by P. and I. Kunkel near Lwiro as early as 28 April. Around Kamituga and in the Itombwe, the last specimens were collected in late September (26 September at Kamituga, 27 September at Mulembe). To the southward, in the Maniema, two females were collected on 21 October, at Lulimba. Near Lwiro and Tshibati, the last specimen was recorded on 20 October.



Distribution of specimens of *Campephaga flava* by months.

Considering the region north of Lake Kivu (Lake Edward, Ruwenzori and Butembo), the general picture is the same, arrivals being in June, departures in October/November, with one exceptional specimen in March, another in May. The five specimens from near Lake Albert are dated between July and November, and compared to the Maniema and southern Kivu it would seem that there is a delay in arrivals and departures of about one month.

Finally, the situation seems more complicated in Rwanda and on Idjwi Island. Most of the records are for June/October. But *flava* was also found in December, January, April and May in Rwanda, and in February on Idjwi (Peters & Loveridge 1942: 244). It seems that in these regions the population is partially resident.

The foregoing records definitely show that *flava* undertakes extensive, although partial, movements. Thus in the southern Zaire and in Rwanda it is present throughout the year. Movements begin in the second half of April, and the first birds reach the Kasai at the end of this month. In the Kivu, *flava* appears only in June, but with some earlier exceptions. And then, near Lake Albert, the first arrivals are only in July. The departures begin in September, in the Kasai, with corresponding delays in the other regions.

To understand these movements, it is necessary to examine the breeding season of *flava*. In the southern Zaire, Chapin (1953: 200) expects the season to be from October to January. For further south the most satisfactory and detailed indication is by Benson, Brooke & Vernon (1964: 73) who give 32 egg-laying records for present-day Rhodesia and for Zambia and Malawi. These all fall within the period September to January, and substantially support Chapin's expectation for the southern Zaire. This may be accepted as the breeding season south of the equator at least to as near as 8°. For north of the equator, I have found little indication about the season. Urban & Brown (1971: 76) record egg-laying in southern Ethiopia in April and possibly in February. In Kenya, nearer to the equator, a female was shot near Nairobi, on 4 April, with a large but shell-less egg in the oviduct (Jackson 1938: 1165). We can rely also on the statement by Mackworth-Praed & Grant (1955: 557), but unsupported by any detail, that breeding takes place in Kenya in March and April and, in northern Tanzania, in January and May (breeding condition). So we may accept for the breeding season January to May near the equator in East Africa.

In the Zaire in particular, Lynes (1938: 96) collected two males in breeding condition in the Katanga, at Katofia, in January and on the upper Lufira in February, while a female was found at a nest containing a nestling just hatched at Lubumbashi on 15 January. My collectors obtained a male at Mulembe, north of Fizi, with gonads enlarged (4–5 mm) on 27 September, and another male at Mahila, near Mount Kabobo, surely in breeding condition (testes 6–7 mm), on 16 October (Prigogine 1960: 30).

On the other hand, none of the specimens of *flava* collected for me in various localities in the Kivu, including Idjwi Island, had the gonads enlarged. Chapin (1960) examined six adult males and one adult female collected near Tshibati. Only one, shot on 17 October, had gonads slightly enlarged (4–5 mm). Moreover, two males and three females, all adult, collected near Lwiro by P. and I. Kunkel (*in litt.*), had very small gonads. P. and I. Kunkel also found that 18 out of a total of 26 adults were moulting; while three juveniles examined in July and August were also moulting, but two others in September and October had completed the moult.

It seems that during the dry season there is an invasion of forest habitats by *flava*. Without doubt there is a more plentiful food supply, especially in moist equatorial or montane forest, than in open biotopes such as wooded savannas. The movement is fairly perceptible in the southern Kivu, as around Kamituga, or in the Maniema, as at Nyangulube, near Kampene, where *flava* is not only encountered on forest edges but also inside, at altitudes not above 1,300 m. However, the other specimens collected by Bohndorff, Grauer and Pilette, in more southern parts of the Maniema, probably came from gallery forests which are numerous in this region. This also applies in the Kasai and Kwango, where gallery forests occur in the south. Further north, the forests become more extensive, passing gradually into the equatorial forest of the Zaire basin.

We may suppose that the birds entering the southern Kivu, the Maniema, the Kasai and the Kwango belong to the population of *flava* which breeds in the southern Zaire, from the upper Katanga to Mount Kabobo. Probably they move to the north along the western side of the Itombwe Mountains or along the shores of Lake Tanganyika and by the Ruzizi River. It is difficult to suggest what might be the source of the birds found on the western shore of Lake Kivu. It might be the Katanga, but it is also possible that they belong to a population breeding in Rwanda or even in East Africa.

It is interesting to mention the ringing results obtained by P. and I. Kunkel. Between 1 October 1966 and 23 September 1971, 21 specimens were ringed at Lwiro, of which three were recovered at the same place, as follows (P. and I. Kunkel *in litt.*):

Sex	*Date of ringing*	*Date of recovery*
ad. ♂	23.9.69	30. 7.70
ad. ♂	24.9.69	10.10.69
juv. ♀	8.7.70	26. 9.71

The first and the third recoveries are of special interest as showing a tendency for *flava* to "winter" at the same place.

It seems logical to assume that there is an invasion from East Africa to the Rwanda, Idjwi Island and the northern Kivu during June to October. But it must be remembered that a part of the population of *flava* in this region is resident. Further north we may suppose that birds breeding in Uganda (or further east) appear near Lake Edward, on the Semliki Plain and Butembo, from June to October. But Ruwenzori must surely be a barrier to these movements, and the *flava* found on the lower Semliki Plain and on the western side of Lake Albert probably come from northern Uganda.

With regard to *flava* around Lake Albert, it should be remembered that north of the equator the seasons are reversed. Thus in northern Uganda and northern Kenya December to February are generally dry months. Actually the seasons within five degrees either side of the equator are complicated. Thus in southern Ethiopia the "long" rains, when breeding of most passerine birds is probably at its height, are from March to June, and the "short" rains from October to early December (Benson 1945: 379–380). But *flava* seems to breed near the equator from January (?) to May, which does not seem to coincide altogether with the rains. In any case, as the migratory movement can only take place after the suspension of sexual activity, we may expect that it will not start before June, and that the birds must be back on their breeding grounds by December. In fact the five specimens from west of Lake Albert are dated between 28 July and 10 November. However, the number of specimens is so small that it is impossible to say whether *flava* is resident throughout the year in this area, especially near the lake shore.

It is interesting that in Zambia and adjacent countries *flava* is also reported to be migratory (Benson, Brooke, Dowsett & Irwin 1970: 29–30). During June to September the majority of the birds leave the plateau country above about 1,000 m, and there is an eastward movement, into low-lying valleys and Mocambique. Thus in this part of Africa there is also a movement, but in a different direction and into lowlands, whereas in the Zaire even montane forest at over 2,000 m is invaded.

To conclude, the repercussion of the seasonal movements of *flava* on its relationship with *petiti* may be considered. This latter is a forest bird found not only in the montane forests of the eastern Zaire, but also in lowland forests, as in the Semliki Forest, and also in the lower Zaire. It is definitely not migratory, even though it has not been collected from December to June in the Itombwe, and I thought at one time that it might be a migrant (Prigogine 1971: 133). Distribution of specimens collected in various parts of the Zaire by months indicates it to be resident, however.

Clearly hybridisation between the two forms could only occur in regions where they are sympatric and both in breeding condition at the same season. Chapin (1953: 202) expected *petiti* to breed from February to May, near Djugu, west of Lake Albert, while south of the equator it might do so from

October to January or February. On the western slopes of Mount Kahuzi, at Mule, I collected a male with gonads much enlarged (6–8 mm) on 21 April, another male with gonads enlarged (4–6 mm) on 3 May, and a female ready to breed on 4 May. Chapin (R. T. Chapin *in litt.*) collected another male at Bunyole, north-west of Lake Kivu, at an altitude of 2,100 m, on 22 January, in breeding condition (gonads 6–8 mm). Thus in this region, a little south of the equator, the reproduction of *petiti* has been recorded in January, April and May, and is probably throughout this period. However, *flava* is absent from this region at this season. Unhappily, I have no breeding records for *petiti* west of Lake Edward and in the Itombwe. *Campephaga quiscalina martini* breeds from January to April around Kamituga (Prigogine 1971: 133), and probably *petiti* breeds there at the same time. Again *flava* is absent at this season. So it can be seen that the seasonal movements of *flava* favour its reproductive isolation from *petiti* in that it is only present when *petiti* is not breeding.

In the eastern Zaire, the only places where a contact between *flava* and *petiti* is possible during the breeding season are the region north of Mount Kabobo, the Idjwi Island and possibly around Butembo. In fact Neumann (1916: 147) and Chapin (1953: 199–200) mention intermediates between *flava* and *petiti*, all of which I have examined, from Idjwi Island and from the Maniema, west of Baraka. It is necessary to remember that Grauer collected on 26 November a *Campephaga* female in the montane forest of Idjwi which is without any doubt *petiti*. The same day Grauer collected a male whose inner webs of the remiges are a little yellowish and which is probably a hybrid. This is also the status of another male shot on 22 November, in the same biotope, and surely the status of a female collected on 18 November which shows a decided yellow wash on the underparts. After having compared Grauer's specimens with my *flava* skins from Idjwi, it seems best to consider Grauer's male specimens as intermediates *near petiti*, or hybrids *near petiti*. On the contrary I consider the five specimens collected by Grauer west of Baraka, even the male mentioned as *petiti* by Chapin (1953: 201), as *flava* or as hybrids near *flava*. In any case, at an altitude of 1,200 m west of Baraka, there is no montane forest, and the presence of *petiti* would be very surprising. A female collected at Mahila, near Mount Kabobo, on 14 October, is washed with yellow below (Prigogine 1960: 15). However I must mention that until now *petiti* has not been found on Mount Kabobo. Another female shot in Kinshasa, on 3 August, has a heavy yellow wash on the belly. The locality for the last specimen is north of western Angola where several hybrids have been recorded (Chapin 1953: 197; Hall & Moreau 1970: 52). So the Kinshasa bird was probably a migrant from Angola.

Summary: Account has been taken of 347 specimens of the Common Black Cuckoo-Shrike *Campephaga flava* collected in the Zaire and Rwanda with a view to establishing the nature of any movements. In the southern Zaire (Katanga) it is present throughout the year. But to the northward, in the Kasai, it is only normally present from late April to September; in the Maniema and southern Kivu from June to October. The birds of these areas are believed to be visitors from breeding quarters in the Katanga. Part of the population of Rwanda, Idjwi Island and the northern Kivu is probably resident, although there is an invasion during June to October, probably not from the southern Zaire but from East Africa. Still further north the situation is less clear, although in the region of Lake Edward there is a peak of occurrences in July. In any case, it must be remembered that north of the equator the seasons are reversed.

South of the Zaire there is an easterly movement from breeding quarters in plateau country, into low-lying valleys and Mocambique, during June to September. This is in contrast to the situation in the Katanga, whence the movement is to the northward, even montane areas being invaded.

There is a geographical overlap between *C. flava* and the closely related, resident *C. petiti*. But in general this is at a time of the year when the former is in its "winter" quarters and the latter is not breeding.

Acknowledgements: I am deeply indebted to Mr. C. W. Benson who very kindly read through my manuscript and made many useful corrections. Mrs. R. T. Chapin provided me with personal notes of the late J. P. Chapin and Dr. and Mrs. P. Kunkel sent me a list giving their ringing results. I express to them my gratitude. I wish to thank also Mrs. R. T. Chapin and Dr. G. Mauersberger for sending me on loan *Campephaga* specimens in the collections of the American Museum of Natural History and the Zoologisches Museum in Berlin; and the Institut royal des Sciences Naturelles, in Brussels, for authority to examine their collection.

References:

Benson, C. W. 1945. Notes on the birds of southern Abyssinia. *Ibis* 87: 366–400.

Benson, C. W., Brooke, R. K. & Vernon, C. J. 1964. Bird breeding data from the Rhodesias and Nyasaland. *Occ. Papers Nat. Mus. S. Rhod.* 27B: 30–105.

Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. S. 1970. Notes on the birds of Zambia. Part V. *Arnoldia* (*Rhodesia*) 4 (40): 1–59.

Chapin, J. P. 1953. The birds of the Belgian Congo: Part 3. *Bull. Amer. Mus. Nat. Hist.* 75A.

— 1960. Personal notes unpublished.

Friedmann, H. & Williams, J. G. 1971. The birds of the lowlands of Bwamba, Toro Province, Uganda. *Los Angeles County Mus. Contr. Sci.* 211: 1–70.

Hall, B. P. & Moreau, R. E. 1970. *An Atlas of speciation in African passerine birds.* London: British Museum (Nat. Hist.).

Jackson, F. J. 1938. *The Birds of Kenya Colony and the Uganda Protectorate.* London: Gurney & Jackson.

Lynes, H. 1938. Contribution to the ornithology of the southern Congo Basin. *Rev. Zool. Bot. Afr.* 31 (1): 1–129.

Mackworth-Praed, C. W. & Grant, C. H. B. 1955. *African handbook of birds*, Series I, Vol. 2. London: Longmans.

Neave, S. A. 1910. On the birds of Northern Rhodesia and the Katanga District of Congoland. *Ibis* (9) 4: 78–155, 225–262.

Neumann, O. 1916. Materialien zu einer Revision des Genus *Campephaga* Vieill. *Journ. Ornith.* 64: 146–154.

Ogilvie-Grant, W. R. 1910. Ruwenzori Expedition Reports. 16. Aves. *Trans. Zool. Soc. Lond.* 19 (4): 253–480.

Peters, J. L. & Loveridge, A. 1942. Scientific results of a fourth expedition to forested areas in East and Central Africa. II. Birds. *Bull. Mus. Comp. Zool.* 89: 217–274.

Prigogine, A. 1960. La faune ornithologique du massif du Mont Kabobo. *Ann. Mus. Congo*, 8°, Sc. Zool. 85.

— 1967. La faune ornithologique de l'ile Idjwi. *Rev. Zool. Bot. Afr.* 75 (3–4): 249–274.

— 1971. Les Oiseaux de l'Itombwe et de son hinterland. *Ann. Mus. Afr. Centr.*, 8°, Sc. Zool. 185.

Reichenow, A. 1902. *Die vogel Afrikas.* II. Neudamm: Neumann.

Sassi, M. 1916. Beitrag zur Ornis Zentralafrikas. II. *Ann. Naturhist. Hofmus.* 30: 239–306.

Stone, W. 1936. Zoological results of the George Vanderbilt African Expedition of 1934. VI. Birds. *Proc. Acad. Nat. Sci. Philad.* 88: 529–598.

Urban, E. K. & Brown, L. H. 1971. *A checklist of the birds of Ethiopia.* Addis Ababa: Haile Sellassie I University.

Verheyen, R. 1947. *Exploration du Parc National Albert.* Mission S. Freshkop (1937–1938). Fasc. 2. Oiseaux. Bruxelles: Institut des Parcs Nationaux du Congo belge.

[The cost of reproduction of the map in the above paper is to be borne by the author.—*Ed.*]

A second southern record of the pipit *Tmetothylacus tenellus*

by R. K. Brooke & M. P. Stuart Irwin

Received 24th March 1972

The Golden Pipit *Tmetothylacus tenellus* (Cabanis) is a bird of arid, thorn bushed country from Somalia to central Tanzania (White 1961) which breeds from May to July (Friedmann 1937). It was collected in January 1906 at Irene in the southern Transvaal (Taylor 1906). A second specimen south of its regular range has now been obtained.

On 2nd March 1972 Mr. B. R. Williamson of the Department of National Parks and Wild Life Management, having watched for some days what he believed to be a Golden Pipit, collected it in a thorny ecotone dominated by *Acacia giraffae* and *Dichrostachys cinerea* between the airfield and Gusu (*Baikiaea*) woodland at the Main Camp of Wankie National Park in north-western Rhodesia. The specimen which is now in the collection of the National Museum of Rhodesia in Bulawayo is an adult male *Tmetothylacus tenellus* which has nearly completed its moult. It corresponds completely in appearance with three adult male specimens from Kenya and Somalia in the National Museum and with the detailed description in Archer & Godman (1961) including having the lower part of the tibia bare of feathers. Its measurements are: wing 83, tail 55, culmen from base 15, tarsus 26 mm. Friedmann (1937) gives measurements for six males as: wing 80 – 83, tail 54 – 61, culmen 15·0 - 16·5, tarsus 24·0 – 26·5 mm. Our specimen corresponds very well with his series in measurements.

Archer & Godman (1961) record a southward passage on 21st June in northern Somalia and Bannerman (1910) records a juvenile which flew into a house in Nairobi, Kenya, on 5th June. *T. tenellus* is obviously prone to movements in some numbers and out of its normal habitats and breeding range. These movements require to be studied by those familiar with its terrain.

Clancey (1960) discusses Taylor's (1906) record from the Transvaal and confirms that the specimen is correctly identified and a wild taken bird, i.e. not an escape. However he rejected the provenance of the bird on the ground that in the next 55 years of intensive work in southern and south-eastern Africa it was neither collected nor visually reported. We tacitly concurred in his rejection of *T. tenellus* from the southern African list. However, obtaining a second southern African specimen leads us to regard *T. tenellus* as a species inclined to occasional, long distance, southward eruptions with the corollary that the 1906 Transvaal specimen was a natural event and that Taylor's (1906) account should be accepted at its face value.

References:

Archer, G. & Godman, E. M. 1961. *The birds of British Somaliland and the Gulf of Aden* IV. Edinburgh: Oliver & Boyd.

Bannerman, D. A. 1910. On a collection of birds made by Mr. A. B. Percival in British East Africa. *Ibis* 9 (4): 676–710.

Clancey, P. A. 1960. On the South African record of the Golden Pipit *Tmetothylacus tenellus* (Cabanis). *Ostrich* 31: 176.

Friedmann, H. 1937. Birds collected by the Childs Frick expedition to Ethiopia and Kenya Colony Part 2. *U.S. Nat. Mus. Bull.* 153.

Taylor, L. E. 1906. Notes on certain birds hitherto unrecorded from the Transvaal. *Journ. S. Afr. Orn. Un.* 2: 39–43.

White, C. M. N. 1961. *A revised check list of African broadbills, pittas, larks, swallows, wagtails and pipits.* Lusaka: Govt. Printer.

The American Purple Gallinule, *Porphyrula martinica* on Ascension and St. Helena Islands

by Storrs L. Olson

Received 22nd March 1972

Recently in this journal (Olson, 1971, *Bull. Brit. Orn. Cl.:* 90 – 92) I referred a record of an immature *Porphyrula* from Ascension to the African species *alleni* and discussed the occurrence of members of this genus on islands in the South Atlantic. Since then, new information has come to light which casts doubt on my previous identification of this individual and adds a new species to the vagrant faunas of Ascension and St. Helena.

In the summer of 1971 I was again in the South Atlantic, spending six weeks on St. Helena and an additional two weeks on Ascension, mostly in search of fossil birds. On St. Helena I found the African race of the Common Gallinule (*Gallinula chloropus meridionalis**) to be an abundant resident of the marshy vegetation in Fisher's Valley and other suitable habitats around the island. In pursuit of specimens of this species on 10th June 1971, I flushed and collected an immature *Porphyrula* from a growth of wild yams in the small stream running through the upper part of Fisher's Valley. Upon picking up the bird I discovered that it was the American species, *martinica*, rather than the African *alleni* that I would have expected. The specimen, now in the U.S. National Museum of Natural History, is a female with the following measurements: culmen from nostril, 16·0; culmen from posterior of shield, 40·8; wing (chord) ,179; tarsus, 64·2; middle toe without claw, 60·5; tail, 73·3 mm.

Later, on Ascension on 22nd July, I was shown a caged bird that had been captured a month previously inside one of the storage sheds at English Bay. This was also an immature *Porphyrula martinica*. The bird was emaciated (no small wonder considering its prolonged diet of bread and water) but I obtained from it the following measurements: culmen from shield, 37; wing (chord) (worn), 160; tarsus, 60 mm; and returned the bird to its captors advising them of a more suitable fare for their charge. Mr. Dave Gallop kindly photographed the specimen for me.

I now believe that the dim photograph of a *Porphyrula* from Ascension that I discussed before (*op. cit.*) is probably of *martinica* rather than *alleni*, and that its wing formula may be attributed to wear. Regardless, there are now definite records of both *martinica* and *alleni* from Ascension and St. Helena. Because of the similarity of the immatures, previous records of this genus from either island not substantiated by specimens may be equivocal. Immature *alleni* may be distinguished from *martinica* by its smaller size, usually scaly dorsal pattern, and, in unworn plumage, by the primary formula.

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*There has been some confusion regarding the correct subspecific epithet for the African race of *Gallinula chloropus*. The names *meridionalis* and *brachyptera* have both been used, based on *Stagnicola meridionalis* and *S. brachyptera* of C. L. Brehm (1855, *Der vollstandige Vogelfang:* 331). Mackworth-Praed and Grant (1935, *Ibis:* 443) reviewed this situation and concluded that despite the discrepancies in Brehm's descriptions, there was no doubt that in both instances he was referring to the species *Gallinula chloropus* and that therefore *meridionalis* (Brehm 1855) was the correct name (presumably on the basis of line priority). The case is somewhat less equivocal than that, however, as the name *meridionalis*, with an identical description, dates back to 1831 (C. L. Brehm, *Handbuch der Naturgeschichte aller Vogel Deutschlands:* 707) and therefore has 24 years priority over *brachyptera*. This last reference has probably been overlooked because of its great rarity. Bangs (1900, *Auk:* 128) says that only 200 copies were printed.

The prevailing winds on both St. Helena and Ascension are strong south-east trades blowing from the direction of Africa. Other vagrants to both islands are of a distinctly African, or at least Old World, nature. At least two of the endemic birds of St. Helena, the living plover *Charadrius sanctaehelenae*, and an extinct species of hoopoe (Olson, MS), are of certain African origin. How then is the presence of an American rallid on these islands explained? Two hypotheses come to mind. I assume to begin with that vagrant rallids are transported on the wind and for the most part have little choice of direction. First, it may be that some *P. martinica* are picked up in the westerly winds from South America that supply Tristan da Cunha with its regular influx of gallinule vagrants and that some of these individuals continue to the proximity of the western coast of Africa where they are in turn picked up by the south-easterly trades and blown back out to St. Helena and Ascension. Another consideration, however, is that the trade wind layer is shallow and extends to an altitude of perhaps no more than 1,000 or 1,500 feet. This condition at St. Helena is discussed by Murphy (1936, *Oceanic Birds of South America:* 178). Meteorological crews who were launching weather balloons on Ascension informed me that there too, the trade winds extended to no more than 1,500 feet. It is possible then that *P. martinica* might be carried to Ascension and St. Helena by westerly winds that lie above the trade wind layer. Although the surface winds are unquestionably of paramount importance in the avian colonization of oceanic islands, the case of *P. martinica* shows that at least one species may not always be bound to their direct influence.

I wish once again to thank the Smithsonian Institution, the U.S. Air Force, and my many friends in the South Atlantic, all of whom assisted me. George E. Watson helped in many ways and commented on the manuscript.

Notes on the Yellow-billed Tern *Sterna superciliaris*

by F. Haverschmidt

Received 8th February 1972

The Yellow-billed Tern is a small tern strikingly similar to the Little Tern (*Sterna albifrons*) but easily identified by its stouter bill which is wholly yellow in the breeding plumage. It occurs in South America east of the Andes from Colombia to northern Argentina. In this general area its distribution overlaps with that of the Little Tern during the non-breeding season of the latter species but while *albifrons* is confined to the seacoast, *superciliaris* is mostly a strictly freshwater species (Murphy 1936, Hellmayr & Conover 1948, Fisher & Lockley 1954, Meyer de Schauensee 1966, Watson 1966). However, this difference of habitat is not so clear cut as is generally stated, as in Surinam, where no species of tern has been found nesting, I observed all through the year great numbers of immature *superciliaris* on the seacoast, fishing at sea or resting in flocks on sandbanks and mudflats among Common Terns *S. hirundo*, Royal Terns *S. maxima*, Cayenne Terns *S. sandvicensis eurygnatha*, Little Terns *S. albifrons* and Large-billed Terns *Phaetusa simplex*. I have collected several out of flocks along the coast; starting in the west near Nickerie one sp. on 15th June 1953, and three on 9th June 1954; near Coronie two sp. on 1st August 1953, two on 13th, 14th July 1953 and three on 26th May 1966; and near Gandoe one sp. on 23rd July 1967. All these birds were immature. It is equally numerous on the brackish lagoons behind the coastline and it was present all through the year on a lagoon at Maasstroom plantation (Commewijne Dist.) where I obtained a series of specimens.

On these lagoons it was often in company with Large-billed Terns *Phaetusa simplex* and Gull-billed Terns *Gelochelidon nilotica*. Furthermore it is always present on the tributaries of the great rivers and it occurs upstream on all of them far into the interior as does the Large-billed Tern. At times it was extremely numerous on the Surinam River near Paramaribo where I observed from mid October till mid November 1952 every afternoon a constant stream of these small terns flying downstream low over the water surface apparently en route for a roost at the coast in company with Large-billed Terns and Laughing Gulls *Larus atricilla*. Moreover I saw a few times small numbers feeding over flooded rice fields by plunging down into the shallow water near Nickerie on 23rd and 24th January 1954, and near Paramaribo on 12th February 1947 in company with Large-billed Terns.

As a breeding bird the Yellow-billed Tern replaces the Little Tern in continental South America. The Little Tern has apparently never been found breeding on the South American mainland, but it nests as far south as on the islands of Aruba, Curaçao and Bonaire in the Netherlands Antilles near the Venezuelan coast, where it has been found nesting from May to well into July (Voous 1957). Definite breeding records of *superciliaris* are extremely few, and relate mostly to sandbanks on rivers far inland, which indicates that at least during the breeding season *superciliaris* is almost exclusively a freshwater species as is the Large-billed Tern *Phaetusa simplex*. Davis (1935) found a nest with two eggs on a sandbank on the Rupununi River in Guyana on 9th November 1931, where *Phaetusa simplex* was also nesting. Wetmore (1926) encountered two pairs on 9th January 1921 east of Montevideo, Uruguay, evidently on their nesting grounds, darting around him with "complaining cries". Escalante (1970) collected two juveniles on 25th February and 2nd March 1960 in the Department of Artigas in Uruguay, and remarked that they were probably from eggs laid in December. He also collected two adult females on 27th January 1959, from six pairs near Arroyo del Potrero at 35° S. in Uruguay, one of them having an unshelled egg in the oviduct.

Laubmann (1939) whose collector was on the Rio Jejui Guazu in Paraguay from 28th December 1931 to 14th January 1932, reports that it was a common breeding bird on that river but he omits further details. Oates (1901) reports eggs collected by E. Bartlett on the Huallaga River in Peru on 21st July. Grant (1911) collected a series of eggs on the Rio Paraguay at Colonia Rissa on 9th September and the Rio Apa, Paraguay on 10th September. It was nesting in company with *Phaetusa simplex*. The breeding season had certainly already started in August, as he obtained a nestling on 9th September.

My own records indicate that the population in Surinam also breeds about November/February. On the lagoon at Maasstroom already mentioned which I visited regularly during 1963 – 65, non breeding birds were present all through the year. On 27th October 1963 I noticed among them a number in full breeding plumage of which I collected four specimens and another as late as 24th November. During December only birds in immature plumage were present. On 5th April 1965 I observed once more a number of adults, accompanied by juveniles on the wing. The latter begged for food in flight, uttering a chirrupping note, and were being duly fed. I collected two of the adults and one of the juveniles, the latter having brown spots on its upperparts as in the birds figured by Escalante (1970). These juveniles were probably from eggs laid in January and February. In my series of 23 specimens of the species, now preserved in the Leiden Museum, there are 15 in the immature plumage. This plumage is inaccurately described in the literature. Watson (1966) describes, and figures in plate 9, the immature bird as mottled with brown on its upperparts and with a dark carpal bend. However, this is the plumage of the juvenile. In the immature the upperparts (back and wings) are immaculate grey without any brown mottling, and the dark carpal bend is less prominent than in the juvenile and sometimes only faintly indicated. Moreover the bill is not wholly yellow as in adults, but the tip of both the upper and lower mandible is horn-brown, as is also the area on the upper mandible around the nostrils. The crown is greyish with blackish streaks. In immature dress the Yellow-billed Tern can at a glance be distinguished from the immature Little Tern, as the latter has a wholly black bill and a very prominent dark carpal bend (Haverschmidt 1972).

Non breeding *superciliaris* collected on 9th February, 22nd February and 15th March 1964, i.e. in the breeding season, were in exactly the same plumage as those collected during May – July in the non breeding season, and can be considered as having a plumage equivalent to the *portlandica* plumage phase which has lately been established in several other species of terns (Scott & Grant 1969; Grant, Scott & Wallace 1971; Haverschmidt 1972).

In the gizzards of my specimens I found apart from small fishes (Cichlids) also shrimps (Crustacea, Decapoda). Weights of 11 males were 40 – 57 (47) g and of 18 females 42 – 57 (46) g.

Summary: The Yellow-billed Tern is numerous in coastal Surinam where great numbers spend the period of immaturity on the sea-coast, on brackish lagoons behind the coastline and on the tributaries of large rivers. In this period it is thus not confined to freshwater. From the appearance of adults accompanied by juveniles on the wing in early April it is concluded that breeding takes place about November/February. The plumage and bill colour of immatures is described.

References:

Davis, T. A. W. 1935. Some nesting notes from the savannas of the Rupununi District, British Guiana. *Ibis* (13)5: 530–531.

Escalante, R. 1970. The Yellow-billed Tern (*Sterna superciliaris*) in Uruguay. *Auk* 87: 575–577.

Fisher, J. & Lockley, R. M. 1954. *Sea-birds.* London: Collins.

Grant, C. H. B. 1911. List of birds collected in Argentina, Paraguay, Bolivia and southern Brazil. *Ibis* (9)5: 473–474.

Grant, P. J., Scott, R. E. & Wallace, D. I. M. 1971. Further notes on the "*portlandica*" plumage phase of terns. *Brit. Birds* 64: 19–22.

Haverschmidt, F. 1968. *Birds of Surinam.* Edinburgh: Oliver & Boyd.

— 1972. Further evidence of the "*portlandica*" plumage phase in terns. *Brit. Birds* 65: 117-119.

Hellmayr, C. E. & Conover, B. 1948. Catalogue of birds of the Americas. *Field Mus. Chicago. Zool. Ser.* 13(1) (3): 317–319.

Laubmann, A. 1939. *Die vogel von Paraguay.* Vol. 1. Stuttgart: Strecker und Schroder.

Meyer de Schauensee, R. 1966. *The species of birds of South America.* Narberth: Livingston.

Murphy, R. C. 1936. *Oceanic Birds of South America.* Vol. II. New York: American Museum of Natural History.

Oates, E. W. 1901. *Catalogue of the collection of birds eggs in the British Museum (Natural History).* Vol. I. London: British Museum (Natural History),

Scott, R. E. & Grant, P. J. 1969. Incomplete moult in *Sterna* terns and the problem of their identification. *Brit. Birds* 62: 93.

Voous, K. H. 1957. The birds of Aruba, Curacao and Bonaire. *Studies on the fauna of Curacao and other Caribbean Islands* 7: 144–145.

Watson, G. E. 1966. *Sea-birds of the tropical Atlantic Ocean.* Washington D.C.: Smiths. Inst.

Wetmore, A. 1926. Observations on the birds of Argentina, Paraguay, Uruguay and Chile. *U.S. Nat. Mus. Bull.* 133: 139.

The feet of young swifts *Apus apus, caffer* and *affinis*

by Collingwood Ingram

Received 15th May 1972

Brooke (1972, *Bull. Brit. Orn. Cl.* 92: 54) states that "Brooke (1964) showed that newly hatched nestlings of *Apus apus*, *A. caffer* and *A. affinis* were hatched with zygodactylous feet and that this condition lasts for the best part of the first week of life". This statement conveys to the reader the impression that he was the first to discover, and place on record, the astonishing fact that the feet of a newly hatched swift are structurally entirely different from those of the adult bird. Actually I described and illustrated this phenomenon (3rd June 1922, *Country Life*, without illustration; 15th July 1922, *Country Life*, with illustration) and again (1955, *Ibis* 97: 149).

In July and during the first half of August 1955, for a period of nineteen days, I had the opportunity to study the daily development of a nestling *Apus apus*. During that time a phenomenal morphological change in the shape of the feet gradually took place. The initial zygodactylous form had by the end of that period almost completely assumed the pamprodactylous form of the adult, that is, the four digits were by then lying more or less parallel to one another.

[Mr. Brooke points out that in the 1964 reference quoted above he refers back to Brooke (1957, *Ostrich* 28: 167), wherein, in describing the development of the young of *Apus caffer*, he draws attention to the note by Ingram (1955, *Ibis* 97: 149). This note was indeed the original source of his interest in the arrangement of toes in nestling swifts, and but for which the phenomenon might have escaped his notice—Ed.]

Possible extension of the winter range of the European Starling *Sturnus vulgaris* to Hong Kong

by M. A. Webster

Received 17th May 1972

On 14th November, 1971, two European Starlings *Sturnus vulgaris* were sighted by F. A. W. Whitford and myself near the village of Lok Ma Chau in the northern part of the New Territories, Hong Kong, at 22° 30′ N., 114° 05′ E. Birds of the same species were seen regularly in the same small area during the winter, by at least eight observers, the maximum number of birds being seven. The latest sighting was on 27th February, 1972. In strong sunlight, the plumage had a purple sheen, indicating that the birds may have been of the Siberian subspecies *S. v. poltaratskyi* Finsch. No specimen was taken.

According to available literature (Cheng, T. H., 1958, *Birds of China;* La Touche, J. D. D., 1927–34, *Handbook to the Birds of Eastern China;* Smythies, B. E., 1953, *Birds of Burma*, 2nd ed'n), the species has been recorded as breeding in the extreme north-west of China, and as a vagrant to northern Burma and northern China south to Wei-hai-wei. All these areas are over one thousand miles from Hong Kong. Since there is practically no information available on range extensions in China over the past thirty years, the possibility of the genuine one which this record provides is noteworthy. The test will be whether the species occurs again in increasing numbers in subsequent years. No other abnormal migrants from the north or west were recorded over the same period. The species has not been recorded in captivity in Hong Kong.

An out of season breeding record of *Aquila wahlbergi* from Zambia

by R. K. Brooke

Received 13th March 1972

While examining the series of Wahlberg's Eagle *Aquila wahlbergi* Sundevall in the National Museums of Rhodesia in Bulawayo for moult and age characters I found a newly fledged juvenile from Balovale in the extreme west of the North-Western Province of Zambia collected by C. M. N. White on 6 July 1943. It is in fresher plumage than two fledged juveniles collected on 11 February at Norton in Rhodesia and 15 February at Solwezi in Zambia. The Zambian egg-laying season is September to December with a peak in September (Benson *et al.* 1971) and in Rhodesia it is August to November with a peak in September (Benson *et al.* 1964). The combined incubation and nestling period in *A. wahlbergi* is four months (Brown & Amadon 1968). On the assumption that both February taken specimens came from eggs laid in the peak month of September, i.e. five months earlier, the obviously younger Balovale bird taken in July came from an egg laid in March, the month before that in which *A. wahlbergi* normally leaves Zambia (Benson *et al.* 1971). Britton (1970) in his monograph on the Balovale district also regards *A. wahlbergi* as leaving the district in April. It is apparent that while the great majority of *A. wahlbergi* leave Zambia a few do not and may even breed during the period of normal absence.

I am obliged to the Keeper of Ornithology of the National Museums of Rhodesia for facilities for study.

References:

Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. S. 1971. *The birds of Zambia.* London: Collins.

Benson, C. W., Brooke, R. K. & Vernon, C. J. 1964. Bird breeding data for the Rhodesias and Nyasaland. *Occ. Pap. Nat. Mus. S. Rhod.* 27B: 30–105.

Britton, P. L. 1970. Birds of the Balovale District of Zambia. *Ostrich* 41: 145–190.

Brown, L. H. & Amadon, D. 1968. *Eagles, hawks and falcons of the World* II. London: Country Life Books.

Geographical variation in *Pseudhirundo griseopyga*

by R. J. Dowsett

Received 15th April 1972

White (1961) recognises two races of the swallow *Pseudhirundo* (*Hirundo*) *griseopyga* (Sundevall), namely the nominate and *liberiae* Bannerman. I have examined 113 museum study skins from throughout the range of the species, and come to a rather different conclusion. The map shows the geographical distribution of the material examined.

There is no justification for recognising *gertrudis* (Grote) on present evidence, and it should be considered a synonym of nominate *griseopyga*. *Gertrudis* was described from Garoua in Cameroun, and the nominate race from Natal in South Africa. Bannerman (1937, 1953) considers *liberiae* and *gertrudis* to be smaller than the nominate race, and gives the wing lengths of *liberiae* and *gertrudis* as 92–93 and 89.5–94 mm respectively. The Table compares wing lengths of the four named races, the sample of the nominate race being from the geographically nearest populations of Ethiopia and Kenya. Tail length in this species is very variable with no apparent geographical pattern, and I consider it to be of no taxonomic importance.

TABLE

Wing lengths (in mm) of the four races of *Pseudhirundo griseopyga*

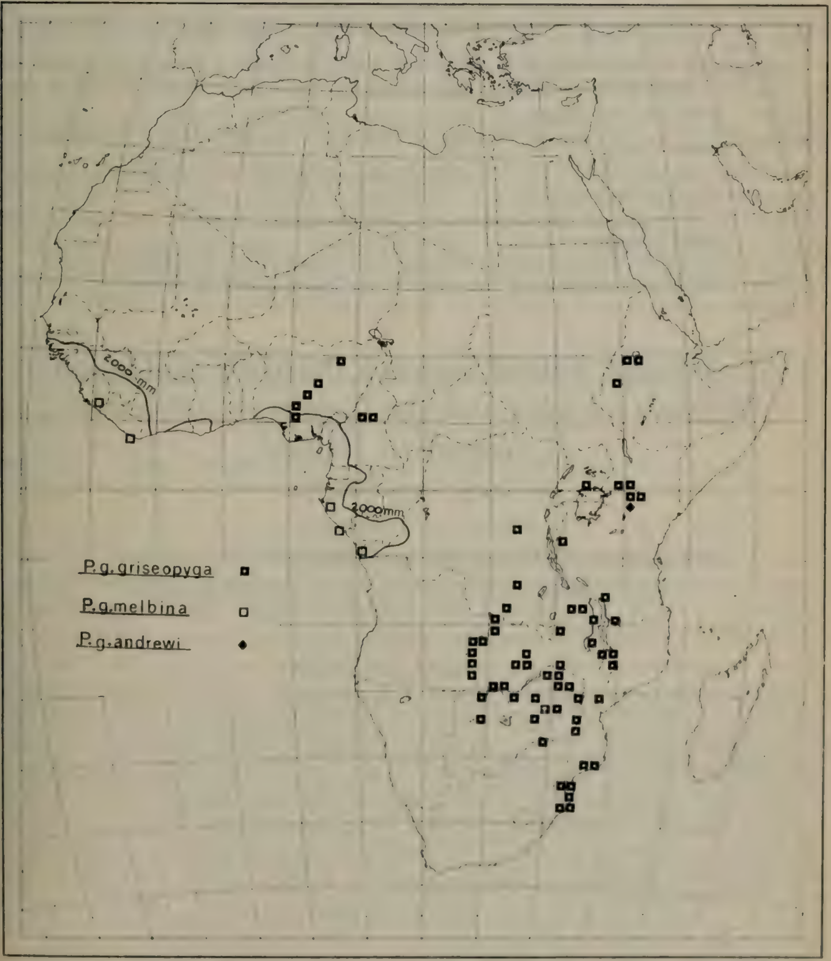
	range	*mean*	*n*
griseopyga	93–104	98.4	10
gertrudis	90– 96	93.3	5
melbina	91–100	93.3	3
liberiae	92– 93	92.5	2

Juveniles and birds in active wing moult are excluded from the Table. These meagre data do suggest that the nominate race is on average larger than the other three. However it is unlikely that birds from the range of *gertrudis* are a discrete population, and more material might well show size to vary clinally within *gertrudis* and the nominate race. In the colour of rump and crown *gertrudis* is only slightly browner than *griseopyga*, and this too may be expected to be a clinal factor. Nine specimens from Cameroun and Nigeria, all away from the coast, are very similar to birds of the nominate race from eastern Africa, although a couple from Nigeria are rather darker brown on the rump and crown. I can find nothing but purely individual variation amongst all the specimens examined from southern and eastern Africa. The darkness of the lores and the presence or absence of a white supercilium of varying extent seem to be purely individual differences.

But six birds from coastal western Africa differ consistently from the nominate race in being very much darker brown on the rump and crown, as well as apparently averaging smaller in size. These specimens are from five localities in Sierra Leone, Liberia, Gabon and Cabinda. *Melbina* (Verreaux) was described from Gabon and *liberiae* from Nanna Kru in Liberia, whence came one of the specimens examined in the present study. Bannerman (1937) separated *liberiae* from *melbina* by its "browner, less sooty rump, and the paler head, which is not glossed with blue on the crown". However, I can see no consistent differences in colour between two *liberiae* (including one available to Bannerman) and six *melbina*. Clearly further material is needed, but I think it is more realistic at present to consider the dark coastal birds as comprising the one race *melbina*, which is the older name. The map shows that *melbina* is recorded only from areas of very high rainfall and, more important, high humidity along the coast. It is quite possible that, except for the dry "Dahomey Gap", *melbina* is widespread along the coast between The Gambia (whence White 1961 records it) and Cabinda, but only further collecting can determine this.

It is relevant to mention here two small hirundines which were caught and ringed at Vom (9° 50′ N., 8° 50′ E.) in Nigeria in 1968, and which showed a number of peculiarities. The birds were caught by Dr. J. R. Lang, and I have been able to examine his notes and colour photographs, as have C. W. Benson and Mrs. B. P. Hall amongst others. These birds showed extremely well marked superciliary stripes and a dark, blackish patch from the bill, through and under the eye. They were also very dark brown on the upperparts according to Dr. Lang's notes, although they had a paler rump. The measurements of wing and tail taken by Dr. Lang at the time are very similar to those of *P. griseopyga gertrudis*, and they seem to have been structurally identical. It is regrettable that no specimen was taken, but there is no valid reason, on the evidence available, to suppose the Vom birds to be anything but some form of *griseopyga*.

Mention should also be made of *Hirundo andrewi*, described from a single specimen by Williams (1966) from Lake Naivasha in Kenya. I have seen the type specimen in the British Museum (Natural History) and feel that for the moment it is best considered a race of *griseopyga*, as Hall & Moreau (1970) also recommend. It is even browner above than *melbina*, and the whole of the underside too is pale brown. Structurally it does not seem to differ from *griseopyga*, although Williams (1966) suggests it is more robust in the field. The wing and tail lengths as given by Williams are within the range of *griseopyga*, and its weight of 10 g is little more than the mean of 9.1 g of nine birds caught for ringing in Zambia (range 8.3–9.9 g). Williams (1966) and Hall & Moreau (1970) both suggest that *andrewi* might breed somewhere in Ethiopia, as it was collected alongside the martin *Riparia cincta erlangeri* which breeds there. It is perhaps significant that the only areas of comparable high humidity away from the coast of western Africa are parts of the Ethiopian highlands and the Kivu area. Clearly further material is needed to clarify the position of *andrewi*.



Pseudhirundo griseopyga: Distribution of specimens examined, with approximate limit of 2,000 mm isohyet.

On present evidence, therefore, one should consider *Pseudhirundo* a monotypic genus, the species *griseopyga* having three subspecies. Brooke (1972), Chapin (1953) and Hall & Moreau (1970) have stressed the uniqueness of *Pseudhirundo* amongst African hirundines, and I agree with Brooke that it is somewhat misleading to merge it with the genus *Hirundo*.

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References:

Bannerman, D. A. 1937. *Pseudohirundo griseopyga liberiae*, subsp. nov. *Bull. Brit. Orn. Cl.* 58: 8–9.

— 1953. *Birds of West and Equatorial Africa.* Vol. 2. Edinburgh & London: Oliver & Boyd.

Brooke, R. K. 1972. Generic limits in Old World Apodidae and Hirundinidae. *Bull. Brit. Orn. Cl.* 92: 53–57.

Chapin, J. P. 1953. The birds of the Belgian Congo. Part 3. *Bull. Amer. Mus. Nat. Hist.* 75A.

Hall, B. P. & Moreau, R. E. 1970. *An Atlas of speciation in African passerine birds.* London: British Museum (Nat. Hist.).

White, C. M. N. 1961. *A revised check list of African broadbills, pittas, larks, etc.* Lusaka: Government Printer.

Williams, J. G. 1966. A new species of swallow from Kenya. *Bull. Brit. Orn. Cl.* 86: 40.

[The cost of reproduction of the map in the above paper is to be borne the by author.—*Ed.*]

An apparent hybrid between Barrow's Goldeneye *Bucephala islandica* and the Common Goldeneye *B. clangula* in Iceland

by Sven-Axel Bengtson

Received 14th January 1972

On 20th June 1970 an aberrant looking male goldeneye was identified some 60 m offshore near the farm Vindbelgur at Lake Myvatn in northeast Iceland (approx. 65° 35′ N. 19° 00′ W.). More than ten years of field experience of both Barrow's Goldeneye *Bucephala islandica* and the Common Goldeneye *B. clangula* immediately made me suspect that the bird was a hybrid. I became convinced after having studied it with a telescope (X 25) for several minutes. The bird could not be collected but my field-notes read as follows:—"The general characteristics of the bird strongly suggest a hybrid islandica x clangula. The pattern of black and white colours on the back, sides, and flanks is intermediary between islandica and clangula. The scapulars are whiter than in islandica and the folded wings do not look dotted with white spots as in islandica but are more streaky. The vertical black strip in front of the folded wing islandica, which is lacking in clangula, is only slightly noticeable. The characteristics of the head are a mixture of the two species. The white patch between the eye and the base of the bill is more or less round as in clangula. The head has neither the glossy bluish colour of islandica nor the glossy greenish of clangula but looks more reddish-brown. The shape of the head is intermediary with a pronounced crest like clangula and with clearly elongated nape feathers as in islandica. The bird looks at least as large as a male of islandica".

Although the breeding ranges of the two goldeneye species overlap in several areas in North America only a few hybrids are known. A male was obtained in New Brunswick in 1951 (Snyder 1953) and another male in British Columbia in 1954 (Jackson 1959). There is also a sight record of a male hybrid at Seattle, Washington in 1957 (Schultz 1958). The descriptions of the plumages of the two first-mentioned agree with my observations of the bird on Lake Myvatn. It is understandable that so far only male hybrids have been found because a female would probably never be recognized in the field and not even in the hand because of the similarity of the two species.

Lake Myvatn is the only place in Europe where Barrow's Goldeneye breeds. The population is about 800–1,000 pairs. A large proportion of the population remains in the breeding area throughout the year but some winter in other parts, especially in the southwest of Iceland. No migration from Iceland is known although it may well occur. The Common Goldeneye is not known to breed in Iceland. Until only some ten years ago it was only met with occasionally in Iceland but during the 1960's an increasing number of wintering Common Goldeneyes have been observed in southwest Iceland (Gardarsson 1968). There both males and females occur together with Barrow's Goldeneyes. During the same period males of the Common Goldeneye have been recorded annually on Lake Myvatn (Gardarsson *op. cit.*). Since 1963 I have observed one to six adult or subadult males of the Common Goldeneye each summer on Lake Myvatn. Therefore I have been expecting sooner or later to meet with a hybrid although none of the 26 resident adult males recorded have been paired to a female.

References:
Gardarsson, A. 1968. The Common Goldeneye (*Bucephala clangula*) in Iceland, with notes on identification. (In Icelandic with a summary in English). *Natturufraedingurinn* 37: 76 – 92.
Jackson, M. F. 1959. A hybrid between Barrow's and Common Goldeneyes. *Auk* 76: 92 – 94.
Schultz, Z. M. 1958. Sight record of a hybrid male goldeneye. *Murrelet* 39: 11.
Snyder, L. L. 1953. An apparently hybrid goldeneye. *Wilson Bull.* 65: 199.

A rare colour aberration in the Southern Black-backed Gull *Larus dominicanus*

by I. H. Dillingham

Received 7th March 1972

On 27th June, 1962, in Cape Town harbour, South Africa, I observed a *Larus dominicanus* in fully adult plumage with a white diamond-shaped patch on the upper surface of each wing near the carpal joint. Whilst I made no note of the size of these white patches, from memory and from a rough field sketch they would appear to have been approximately the same size (2½in. x 1½in.) as those recorded in a Greater Black-backed Gull *Larus marinus* by Jones (*Bull. Brit. Orn. Cl.* 1958: 87–8). Donnelly (*Ostrich*, 1966: 56) records a somewhat similar aberration in a *Larus dominicanus* from Port Elizabeth, South Africa, in which the white patch was triangular in shape.

A similar colour aberration has also been recorded in Heermann's Gull *Larus heermanni*, Herring Gull *Larus argentatus*, Lesser Black-backed Gull *Larus fuscus* and the Western Gull *Larus occidentalis* (Sage, *Bull. Brit. Orn. Cl.*, 1958: 71–3; *Bull. Brit. Orn. Cl.*, 1959: 29–31).

Stercorarius longicaudus in tropical African waters

by K. D. Smith

Received 28th January 1972

The Long-tailed Skua *Stercorarius longicaudus* Vieillot is not listed by White (1965) as occurring in African waters. On 20th May 1938, when close to Dakar, Senegal, three adults were seen flying north from a ship bound for South Africa. For reasons unknown I had long forgotten this record, and only recalled it when D. I. M. Wallace (*in litt.*) recently informed me that he saw two harrying Sooty Terns *Sterna fuscata* in the Gulf of Guinea, 0° 17′ N., 3° 24′ E., on 5th April 1969. Also a probable immature was seen at Lagos, Nigeria on 2nd December 1967 by G. Pettitt. The three off Dakar passed very close to the ship, and their long central tail feathers were seen well. Several Great Skuas *S. skua*, and one adult Pomarine Skua *S. pomarinus*, were also seen the same day, also many Black Terns *Chlidonias niger*, flying north as well as many small petrels and large shearwaters, but none was certainly identified.

References:

White, C. M. N. 1965. *A revised check list of African non-passerine birds.* Lusaka: Government Printer.

Discrete breeding and wintering areas of the Waldrapp *Geronticus eremita* (L.)

by W. Roy Siegfried

Received 12th April 1972

The Waldrapp *Geronticus eremita* is a western Palaearctic species whose breeding range formerly spanned the mountainous areas of northern Africa, southern Europe and Asia Minor. During historical times the species has undergone a drastic decline and to-day is rare, with two widely separated breeding populations centred in Morocco and the upper Euphrates. The total population of the species is thought to be less than 2,000 birds (Kumerloeve 1962; Smith 1970).

The Waldrapp is a migrant and both western and eastern populations avoid the dry, hot autumn and early winter of the southern Palaearctic region. Both populations return to their nest sites during the rains in February and March. Wintering birds regularly occur in north-east Africa (Sudan, Eritrea, Ethiopia), but the origin(s) of these birds is not known (Smith *op. cit.*). Do they come from Asia Minor, Morocco, both of these areas, or perhaps elsewhere? There is no evidence for the presence of breeding Waldrapps in north-east Africa. Smith quotes Moreau's opinion (*in litt.*) that the Asia Minor birds might winter in north-east Africa, and that the Moroccan birds go elsewhere. But no other wintering areas are, as yet, known. Moreau considered that a likely area for the Moroccan birds would be the northern edge of the Niger inundation zone in Mali.

If there are, in fact, two populations discrete and widely separated in both breeding and wintering areas, one might expect to find morphological differences between the two groups. I have been able to assemble culmen measurements from totals of 28 specimens from north-west Africa, five from Asia Minor and eight from north-east Africa. Dividers were used in measuring the culmen, taken from the tip of the bill to the edge of the feathers. Only birds collected as adults were included.

The culmens of the north-east African males (125 – 132 mm) and females (121 – 127 mm) range shorter than those of the north-west African birds. Mean dimensions and ranges for the north-west African specimens are:

♂♂: 141·1 ± 5·5, 132 — 146 mm (n = 16),
♀♀: 133·5 ± 4·6, 128 — 145 mm (n = 12).

Lumping north-east African and Asia Minor specimens,

♂♂: 129·0 ± 2·3, 126 — 132 mm (n = 8),
♀♀: 123·6 ± 2·4, 121 — 127 mm (n = 5).

The differences between the two sets of means, 12·1 mm (♂♂ versus ♀♀) and 9·9 mm (♀♀ versus ♀♀), are significant ($t = 6{\cdot}88$ $P < 0{\cdot}001$., $t = 3{\cdot}70$ $P < 0{\cdot}01$).

It seems fair to conclude that the Asia Minor and north-east African birds have shorter culmens than the north-west African birds, and that the birds which breed in Asia Minor probably winter in north-east Africa; the north-west African birds winter in an area discrete and probably widely separated from north-east Africa. Whether this area is in northern west tropical Africa, as Moreau believed, remains to be discovered.

I am obliged to Dr. Dean Amadon for facilities for study in the American Museum of Natural History, New York, and to the Directors of the following museums for specimens: Muséum National d'Histoire Naturelle (Paris), Natur-Museum und Forschungs-Institut "Senckenberg" (Frankfurt-am-Main), Staatliches Museum für Naturkunde (Schloss Rosenstein) (Stuttgart), United States National Museum (Washington D.C.), British Museum (Natural History) (London), Zoologisches Museum (Hamburg), and Zoologisches Museum Alexander Koenig (Bonn). For assisting with the locating and measuring of specimens, I am grateful to R. C. Banks, R. D. Etchécopar, P. G. Frost and H. Kumerloeve. The work was made possible by grants from the Frank M. Chapman Memorial Fund of the American Museum of Natural History, The South African Council for Scientific and Industrial Research and the University of Cape Town.

References:

Kumerloeve, H. 1962. Zur Geschichte der Waldrapp—Kolonie in Birecik am oberen Euphrat. *Journ. Ornith.* 103: 389–398.
Smith, K. D. 1970. The Waldrapp *Geronticus eremita* (L.). *Bull. Brit. Orn. Cl.* 90: 18–24.

First records for the Sudan of *Sylvia cantillans*, *Acanthis cannabina* and *Emberiza cia*

by Sven Mathiasson

Received 3rd April 1972

INTRODUCTION

During a research programme on the vertebrate fauna of an area near the second cataract of the River Nile in the Republic of the Sudan (at 21° 55′ N., 31° 20′ E., and 115 m above sea-level), some aspects of bird migration were also studied. The ornithological work during the period 11 February to 11 April 1964 included daily studies on resting migrants as well as on visible migration, in the course of which three palaearctic species not previously established as occurring in the Sudan were found, namely *Sylvia cantillans*, *Acanthis cannabina* and *Emberiza cia*. The only collected specimen of the latter was destroyed by a cat, but specimens of the other two are now in the Naturhistoriska Museet, Gothenburg, Sweden. Except for a single record of *A. cannabina* from near Khartoum, none of these species was recorded again during extensive excursions which I made during 1968–70 in the middle and eastern Sudan (Khartoum, Gezira-Dinder, Red Sea coast).

The research area was situated in the Nubian part of the Sahara at a latitude where there is practically no rainfall (Sudan Almanac 1961). But the water of the River Nile provides oasis conditions along its course. The natural vegetation is dominated by acacias *Acacia nilotica*, *A. albida*, tamarisks *Tamarix nilotica* and dom palms *Hyphaene thebaica*. Between sand dunes and in strips along the river shore there is some grass. There is cultivation by irrigation of date palms, lemons, wheat, beans, etc. on silt beds on the river edge and on islands. Villages are few and the distance between them often considerable, so that there is no lack of natural habitats.

Sylvia cantillans albistriata (Brehm), Subalpine Warbler.

Collected: 2♂♂, 13 and 27 March, wing-lengths respectively 62, 60 mm, weights 10.7, 9.8 g, nos. SM 247, 405. One ♂ also observed on 21 March.

All three birds were in rather tall acacia scrub. In their behaviour, habitat preference and feeding habits they were similar to Lesser Whitethroats (cf. Mathiasson 1971). One of them (no. 405, 27 March) was observed for a longer period, and fed in the small round flower-balls of acacias as Lesser Whitethroats do. Like that species, it burrowed the bill deep into the flowers so that the forehead was completely yellow from anther-dust.

The two specimens are rather darker on the upperparts than in nominate *cantillans*, with a more pronounced moustachial streak, and the second (next to outermost) primary longer than the fifth. Hence they belong to the subspecies *S. c. albistriata*, breeding in south-eastern Europe and Asia Minor.

The migrations of this species were discussed by Moreau (1961). He accepted the winter-quarters of *albistriata* as a strip along the southern edge of the Sahara mostly south of 18° N., from near Timbuktu to Ennedi, such a winter range, between about 0° and 22° E., comparing with a breeding range between about 15° and 27° E. Moreau could not find much information about the autumn passage and concluded that *albistriata* flies rapidly, with little fall-out, from breeding to wintering grounds. By contrast, he found that in spring the passage is seen abundantly. Large numbers pass through Egypt, the birds approaching the Nile Valley at least 50 miles south of the Delta. Nevertheless Moreau gives no record from the Sudan, and mine seem to be the first from the country. Cave & Macdonald (1955) give no record, and reject one by Bowen (1926). As is to be expected, Hesselbjerg-Christensen (1960) gives no record from Atbara, northern Sudan, for the period 3 July to 26 October 1957 (covering the time of the autumn passage).

Acanthis cannabina cannabina (Linnaeus), Linnet.

Collected: 2♂♂, 28 February, 2♀♀, 4 and 9 March, wing-lengths respectively 78, 77, 77, 78 mm, weights 18.5, 17, 16.3 g (the first ♀ was not weighed), nos. SM 141, 142, 182, 223.

Linnets were seen frequently around the area of the 2nd Cataract between 10 February and 15 March 1964. But during the excursions in 1968–70 mentioned in the Introduction only a single individual was seen, at Geref, 5 km south of Khartoum, on 22 November 1969, while in the Atbara area Hesselbjerg-Christensen (1960) got no record at all. However, considering also the further records detailed below, it would appear that the Linnet is a regular winter visitor to the northernmost Sudan. Nevertheless Dr. J. F. Monk (*in litt.*) has suggested that 1964 might have been an exceptional year. Thus he points out that Turdidae seem to go further south in some years than usual, and this may apply to Fringillidae too – e.g. the occasional occurrence of Bramblings *Fringilla montifringilla* in southern Morocco and central Algeria.

Details of observations made in 1964 around the 2nd Cataract now follow. All are from Sharta except that some for 28 February and the one for 4 March are from Genisab, as indicated. Individuals which were moving southward are indicated as "—> S", northward as "—> N": 10 Feb. (12.30), one —> S; 13 Feb. (16.00), two —> S; one —> N; 16 Feb., one resting; 17 Feb., two resting; 20 Feb. (07.40), two —> S (singing), (08.00), one —> S (singing); 24 Feb. (08.00), seven —> S; 26 Feb. (12.30), two (singing); 28 Feb. (11.20), seven —> N (singing); 28 Feb. (16.00), at Genisab, 27 feeding in cultivation on a small island, several ♂♂ in full summer plumage, two collected (see above); 4 Mar. (16.30), at Genisab, one ♀, in same cultivation as on 28 Feb., collected (see above); 8 Mar. (13.30), one —> N; 9 Mar. (07.30), one ♀ resting, collected (see above); 12 Mar. (08.40), one; 15 Mar. (16.14), one —> N.

The breeding area of the Linnet covers a large part of Eurasia, see for example Voous (1960). In Africa this is restricted to almost the same area as that for the Subalpine Warbler, i.e. north of the Sahara from Morocco to Cyrenaica (also the Canaries and Madeira) (Etchécopar & Hüe 1964). The Linnet has long been known as a regular and common winter visitor to northern Egypt (Nicoll 1919), although Etchécopar & Hüe (*op. cit.*) consider it restricted to the Delta and Fayoum. In 1961, 1964 and 1969 I saw many freshly caught birds kept by dealers in Cairo, and likewise in Luxor in 1961. But it does not necessarily follow that they had been caught in the vicinity.

Of the two males which I collected, no. 142 is in almost full summer plumage, with however grey fringes to the red forehead feathers. The flanks have pronounced streaks. Number 141 is much paler, partly due to pale greyish buff fringes to the feathers of the back and breast. There are only a few red feathers on the breast and forehead, all with broad greyish fringes. The two females are similar to each other, although no. 223 is the darker, with the spots on the breast and foreneck larger and broader.

According to Vaurie (1956, 1959), the linnets of northern Africa and of Europe are all nominate *cannabina*, but Asian birds (from Asia Minor and the Near East eastwards) are the paler *bella*, there being a cline of decreasing saturation from Europe to Asia. Both forms are said to winter in Egypt (see also Etchécopar & Hüe 1964). One of my males (no. 142) and one female (no. 223) are almost identical with Swedish specimens of nominate *cannabina*, the other two paler, especially on the nape, a lighter grey-buff than in Swedish birds, can be matched with material from Macedonia, but nevertheless are darker than material of *bella*.

The wing-lengths of my four specimens are 77 – 78 (77.5) mm, thus shorter than most northern European populations (cf. Vaurie 1956). Meinertzhagen (1954) gives those of males and females of *bella* as 78 – 81 mm, but Dementiev & Gladkov (1954) as 76 – 84.5 mm in 44 males. Vaurie (1956) gives 78 – 82 (79.6) mm for 11 males of nominate *cannabina* from north-western Africa, while (1959) he notes a cline of increasing size from Europe to Asia and decreasing from north-western Europe south to the Mediterranean and northern Africa. On wing-length it is not possible to be sure to which subspecies my specimens belong, but on colour they can safely be placed with nominate *cannabina*.

Emberiza cia Linnaeus,
Rock Bunting.

One male was seen on 9 March 1964 at close range in cultivation near a farm. It was shot, but unfortunately destroyed by a domestic cat. It was alone but six days later another male, identical, was seen at exactly the same place. The black head-stripes, with intervening grey, the neck and breast also grey, showed up clearly. The rufous belly was ill-defined, but in flight the white outer tail-feathers were conspicuous.

The Rock Bunting is widespread in the palaearctic region (cf. Voous 1960). In Africa it breeds in the extreme north-west, in Morocco to Tunisia (cf. Etchécopar & Hüe 1964). It ranges from Asia Minor south to the Lebanon and perhaps also Palestine (cf. Vaurie 1959, Voous 1960). I am not aware of any Egyptian records, but it seems more likely that the birds which I saw were stragglers from eastern Europe or the Near East rather than from north-western Africa. It is impossible to be sure to which subspecies they belonged, although there are several off-season records of nominate *cia* from the Mediterranean Basin. It is worth drawing attention to a record of a juvenile of the species caught in the Tchad region on 11 January 1963 (Salvan 1969: 61).

SUMMARY

Three palaearctic migrants, *Sylvia cantillans albistriata*, *Acanthis cannabina cannabina* and *Emberiza cia* subsp., are definitely recorded from the Republic of the Sudan for the first time, during research at the 2nd Cataract of the Nile in February/April 1964. *Sylvia c. albistriata* may pass through regularly on spring passage (autumn passage being further to the west). *Acanthis c. cannabina* was already known to winter commonly in northern Egypt, and this seems also to apply as far south as the 2nd Cataract. *Emberiza cia* may only be a straggler.

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References:

Bowen, W. W. 1931. *Catalogue of Sudan birds.* Sudan Govt. Mus. (Nat. Hist.), Publication No. 2.

Cave, F. O. & Macdonald, J. D. 1955. *Birds of the Sudan.* Edinburgh: Oliver & Boyd.

Dementiev, G. P. & Gladkov, N. A. 1954. *The birds of the Soviet Union.* Moscow: Sovietskaya Nauka.

Etchécopar, R. D. & Hüe, F. 1964. *Les oiseaux du nord de l'Afrique.* Paris: Boubée.

Hesselbjerg-Christensen, N. 1960. Ornithologiske iakttagelser ved Atbara, Nord-Sudan. *Dansk Orn. For. Tiddskr.* 54: 144–161.

Mathiasson, S. 1971. Untersuchungen an Klappergrasmücken (*Sylvia curruca*) im Niltal in Sudan. *Vogelwarte* 26: 212–221.

Meinertzhagen, R. 1954. *Birds of Arabia.* Edinburgh: Oliver & Boyd.

Moreau, R. E. 1961. Problems of Mediterranean-Saharan migration. Part 3. *Ibis* 103a: 580–623.

Nicoll, M. J. 1919. *Handlist of the birds of Egypt.* Cairo: Government Press.

Salvan, J. 1969. Contribution à l'étude des oiseaux du Tchad (second part). *Oiseau* 39: 38–69.

Vaurie, C. 1956. Systematic notes on palearctic birds. No. 19. *Amer. Mus. Novit.* 1775: 16–21.

— 1959. *The birds of the palearctic fauna. Passeriformes.* London: H. F. & G. Witherby.

Voous, K. H. 1960. *Atlas of European birds.* London: Nelson.

The history of the Island Hen *(Gallinula nesiotis)*, the extinct flightless gallinule of Tristan da Cunha

by A. J. Beintema

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INTRODUCTION

The islands of Tristan da Cunha, and the neighbouring Gough Island, South Atlantic, possess a number of highly peculiar land-birds. One of these is the

Island Hen (or Cock, Black Cock, Island Cock), a flightless gallinule resembling the Moorhen *Gallinula chloropus*. The Island Hen was first described from Tristan da Cunha by Sclater (1861), who called it *Gallinula nesiotis*. About thirty years later Allen (1892) described a closely allied form from Gough, under the name *Porphyriornis comeri*, at a time when the Tristan Island Hen was said to have already become extinct. Nowadays the differences between the two forms are considered hardly sufficient even for subspecific separation. They obviously belong to the same species, *Gallinula nesiotis* Sclater (1861).

Modern scientists think it unlikely that a species of bird could evolve into a flightless stage on two different islands, without getting more strongly differentiated, so it is not surprising that doubts arose if *G. nesiotis* ever existed on Tristan. Broekhuysen & Macnae (1949) cautiously expressed such doubts. Eber (1961) compared *G. nesiotis* from Tristan (of which only three specimens were said to be known) with series of the form *comeri*, and concluded that no valid difference exists between the two forms, the alleged differences falling well within the range of variation in the *comeri* series. This, together with the short history of *G. nesiotis* on Tristan, the small number of specimens, and the evolutionary improbability mentioned above, seemed to be strong enough evidence for Eber to have decided that no gallinule ever existed on Tristan, and that the said three specimens really came from Gough, where the species is still abundant. In recent years this opinion has been gaining currency.

Eber neglected the existence of eyewitness accounts. We must realise that the bird was *described* in 1861, not *discovered;* it was known long before that time. From records of the history of Tristan and its settlement (e.g. Brander 1940) we know that at least three of the eyewitnesses only lived on Tristan, and never visited Gough (viz. Lambert, Carmichael, and Earle). Together with other evidence, their testimonies leave no trace of doubt that a bird, resembling the flightless gallinule from Gough, lived on Tristan. So, either we have to quit the hypothesis that a bird cannot evolve into flightlessness on two different islands without diverging, or we have to make a choice out of the following possibilities:

1. The Island Hen from Tristan differed from the Gough Island Gallinule, but it has never been collected. The alleged specimens come from Gough, as Eber (1961) suggests.
2. The Tristan specimens differ from the Gough specimens in a hitherto undetected way.
3. The Tristan specimens do not differ from the Gough specimens, because the species has been introduced by man from Tristan into Gough, or conversely at the end of the eighteenth and the beginning of the nineteenth century both Tristan and Gough were frequently visited by seal-hunters, who stayed in the islands for some months.

VISUAL RECORDS

Jonathan Lambert, who styled himself King of Tristan da Cunha, lived on the island from 1810 to 1812. In 1811 he wrote: "We have the little black Cock in great numbers, and in the fall (they) are very fat and delicate. We caught some hundreds last year with a dog, . . ." (Holdgate 1958: 19). Dugald Carmichael, who joined a garrison occupying Tristan in 1816–17, states: "The only landbirds on the island are a species of thrush (*Turdus Guianensis*?), a bunting (*Emberiza Braziliensis*?), and the common moorhen (*Fulica chloropus*)." and: "The Fulica conceals itself in the wood, where it is occasionally run down by the dogs" (Carmichael 1818). A more detailed description comes from August Earle (an artist, later draughtsman of the

"Beagle"), who went ashore on Tristan in 1824. Due to bad weather the ship had to leave in a great hurry, and the Captain "accidentally" forgot about Earle, who had to stay on Tristan for six months before he could get off again. In his diary we read: "Besides our albatross, the dogs caught some small birds, about the size of our partridge, but their gait was something like that of a penguin. The male is of a glossy black, with a bright red, hard crest on top of the head. The hen is brown. They stand erect, and have long yellow legs, with which they run very fast; the wings are small and useless for flying, but they are armed with sharp spurs for defence, and also, I imagine, for assisting them in climbing, as they are found generally among the rocks. The name they give this bird here is simply 'cock', its only note being a noise very much resembling the repetition of that word. Its flesh is plump, fat, and excellent eating." (Earle 1832). The "brown hen" Earle saw was obviously a juvenile bird.

Jules Verne (undated) gives a detailed account of Tristan's early history, including Earle's involuntary stay. He invents the story that Lord Glenarvan, during a visit to Tristan da Cunha, enjoyed himself in shooting several couples of black partridges, of which the ship-cook would have to serve an excellent dish. Verne based this story, no doubt, on the description given by Earle. Another eyewitness was William Stirling, who visited Tristan on 12 October 1835, and saw "some moorhens", exactly ten months before his ship "Tiger" ran aground on Astove, Indian Ocean (Stirling 1843, original not seen). Vague evidence comes from Gurney (1853), who received a letter from a Mr. Strange in Sydney, who had met someone who was familiar with a "wingless" bird from Tristan da Cunha.

In 1856 H.M.S. "Frolic" paid a visit to Tristan da Cunha. Nolloth (1856), who was the Captain, reports: "The only landbirds are said to be a thrush, a kind of partridge, and the 'Island cock'. The latter is a carrion bird about half the size of a fowl – plumage black, excepting one or two white feathers in the tail; feet green; beak red, with, in its upper part, a red waxy looking protuberance. This bird is frequently hunted with dogs, and is considered a great delicacy by the islanders." Nolloth made a collection of geological and biological specimens, which he presented to the South African Museum. E. L. Layard added some notes on this collection to Nolloth's report, which show that it contained the only egg ever collected of the Tristan Island Hen: "But among the eggs is one of peculiar interest, being the egg of a *Gallimele* (misprint for Gallinule), called by the islanders the 'island hen'. Corporal Glass mentioned to me in 1842 that the only bird they had besides sea-fowl was a water hen. Can this egg belong to the apterous bird, which is known to have existed on the island some years since?" (Layard 1856). Corporal Glass was head of the community living on Tristan. The egg should still be in the South African Museum, though there may be little hope of finding it. The Island Hen must have become much rarer in the second half of the nineteenth century, because Sperling (1872), who visited Tristan in 1868, tells us: "The solitary wingless landbird of the island is fast becoming extinct, from the depredations of the wild cats."

H.M.S. "Challenger", on its famous cruise, called at Tristan in 1873. The expedition failed to observe the Island Hen, and so great was their authority, that we often find 1873 as the assumed date of extinction. But we must realise that only one day was spent on Tristan, with its 116 sq. km of very rugged terrain. Indeed, from the various reports of this visit we learn that the Island Hen still existed. The islanders said it was scarcely able to fly, could run with great rapidity, and, of course, was excellent eating (Moseley 1892;

Sclater 1878, 1881; Thomson 1877). On several occasions specimens had been sent to Cape Town, and one had been sold to a merchant ship in 1872 (Willemoes Suhm 1876).

The process of extinction may have been completed by the rats, that came ashore for the first time in 1882, on the occasion of the shipwreck of the "Henry B. Paul" (Brander 1940). When in 1906 the "Valhalla" called at Tristan, the islanders said that the Island Hen was no longer to be found (Nicoll 1906).

SPECIMEN RECORDS AND THEIR HISTORY

Only three skins of *Gallinula nesiotis* from Tristan are said to be known, one which died in the gardens of the Zoological Society of London on 8 September 1871, now in the American Museum of Natural History (Greenway 1967 and *in litt.*), and two in the British Museum (Natural History).

There is much confusion about the two skins in the B.M. Sharpe (1894) mentions two adult skins, but Eber (1961) says that one is adult, the other one a juvenile. One of the two dates from 1891, the other one, the type, is from 1861 according to Warren (1966), but from 1864 according to Elliott (1957). A good reason for this confusion may be that, in fact, there are three specimens registered in the B.M., not two, from 1861, 1864, and 1891 respectively, to be found in three different collections. The 1861 specimen is in the type collection, the 1891 specimen is in the main collection, but this one probably originates from Gough. The 1864 skin should be in the collection of extinct birds, but at present cannot be found.

On 25 May 1861, the Zoological Society of London received from Sir George Grey, Governor of the Cape Colony, five Island Hens from Tristan da Cunha, under the care of the society's agent Mr. Benstead (*Proc. Zool. Soc. Lond.*, 1861, meeting 28 May, pp. 208–9). Two were killed in Cape Town, but Mr. Benstead preserved the skins, without heads, and brought these to England. Two others died on board, and were placed in spirit. The fifth could be seen alive in the aviary in June, when Sclater published his description of the species (Sclater 1861). One of the spirit-specimens presumably was stuffed and registered as a type specimen in the B.M. on 16 September of the same year (Warren 1966). The living specimen is probably the one that died three years later, and was purchased from the Zoological Society by the B.M., where it was registered on 30 July 1864 (B.M. reg. no. 1864.7.30.1). The other specimens of Sclater disappeared.

In 1869 Mr. E. L. Layard, in Cape Town, received from the "Islands about Tristan d'Acunha" seabird eggs, island thrushes, finches, and many live Island Hens (Layard 1869). He sent three of these to London, which reached the Zoological Gardens alive (Busk 1869). One of these three may have died two years later, being the 1871 specimen, now in the American Museum of Natural History. The other birds of Layard disappeared. The fate of the bird that was sold to a ship touching Tristan in 1872 (Willemoes Suhm 1876) is unknown.

Skeletal material in the University Museum of Zoology, Cambridge, England (Gadow 1910), appears to be attributable to the birds of Sclater and Layard. A skeleton (bones of trunk), labelled "typus", dated 1861, and received from Sclater in 1865, may be from the same specimen as the type skin in the British Museum. From the label it appears that the sternum of this skeleton is the one depicted in the original description given by Sclater (1861). This label reads: "*Exempl. in loc. cit. delineatum*". The B.M. also possesses the "bones of trunk" (Sharpe 1894). One bird cannot yield two skeletons, so here reappears one of the lost specimens. On the label of this skeleton is written that it belongs to a stuffed specimen in the collection, dated 1864, so apparently it originates from Sclater's living bird, that died later, and was purchased by the B.M., but at present is missing.

The Cambridge Museum also contains three sterna of "*Nesiotis insularis*" from the "Tristan da Cunha Group", received from E. L. Layard (no date). It is highly probable that these are the remains of the three Island Hens that were presented to the Zoological Gardens by Layard in 1869. However, the individual notes on these sterna about their origin are confusing. They are assigned to "Gouglet Islet", "Inaccessible Id St. Tristam", and "Goujlet Isld", respectively. Since it is not known that *G. nesiotis* ever existed on Inaccessible Island, the second sternum, which is indistinguishable from the other two, is obviously mislabelled. The other two apparently come from Gough, so there is no reason to believe that Layard's specimens really originated from Tristan. In consequence, the 1871 specimen in the American Museum of Natural History should be regarded with suspicion, if we maintain the theory that this is one of Layard's birds.

The remaining skin in the B.M., in the main collection, received 1 August 1891, was originally labelled "*Gallinula chloropus* Cape Colony". On the back of the label is written: "Probably from Tristan da Cunha. see *G. nesiotis* Scl." A second label, later attached in the B.M., reads: "This is not the South African Coot it is probably from Tristan or Gough Isl.", with on the back: "*Porphyriornis* (*comeri?*)" to which someone added in pencil: "Yes". All this strongly suggests that this bird should be discarded from the list of "true" Island Hens, since we only know that it came from the Cape Colony (note that in 1891 the Gough Island Gallinule was not yet described, while the Tristan Island Hen was already very rare, if not extinct). This leaves us with one single skin of which we know with certainty that it came from Tristan, viz. the type in the British Museum, which was collected on Tristan by a native girl for Sir George Grey (Warren 1966), and taken to Cape Town by a "person formerly in the service of Sir George Grey" (Sclater 1861), where it finally came into the hands of Mr. Benstead. Any question of this specimen having come from Gough can be ruled out, if only on the ground that even today the Tristanites do not allow their womenfolk to visit Gough, or any other island, owing to the hazards of landing.

It is surprising to find that a Mr. Keytel is said to have presented two Island Hens to the South African Museum, collected by him on Tristan as late as 1908–09 (Mathews 1932), especially since we know that Keytel, during his stay on Tristan, only made one attempt to go to Gough, in which he failed (Barrow 1910). The Keytel collection as a whole contains many vagrants, and is most confusing, different enumerations being in disagreement (Mathews 1932, Péringuey 1910, Winterbottom 1958 and *in litt.*). One of Keytel's Island Hens was found in the South African Museum, but on examination it turned out to be a juvenile *Gallinula chloropus*. So either Keytel collected one more vagrant, or he was unreliable. This again leaves us with no more than one "good" skin. It is, therefore, important to know that there must have been three other "good" ones, from long before the date of description (and therefore thought to be *G. chloropus*), that are hardly ever mentioned. These gallinules, presumably collected by Carmichael in 1816–17 (Stresemann 1953), were sold at the Bullock Auction in 1819, and vanished (see below).

EXAMINATION OF SPECIMENS

The material we have now consists of four skins, one of which appears to be *Gallinula chloropus*, and two of which most likely are *G. nesiotis comeri*. We also have skeletal remains of five birds, three of which apparently belong to *G. nesiotis comeri*. The only reliable skin available is the type in the B.M. On examination I fully agree with previous authors, that no valid differences (in skins) are to be found from the form *comeri*. There is much variation within *comeri*, and characters like "more yellowish feet", and "more white on the wing and on the flanks" are too vague, and hardly, if at all, recognisable in the type skin. The measurements could not be taken, but they are known, and were obtained from M. K. Swales (pers. comm.). They all fall in the middle of the range of *comeri*, except depth and width of the bill, which might have shrunken in such an old specimen.

Comparison of the skeletons, however, reveals a striking difference in size of the sternum and the synsacrum, those of *G. nesiotis nesiotis* being the smaller. This fits in with the assumption that the three birds of Layard (1869) originate from Gough. The sterna of the two "true" *nesiotis* skeletons of Sclater's series, in the B.M. and Cambridge respectively, were compared with seven *comeri* sterna. Two measurements are given, the length of keel along crest (a), and the anterior width (b). The pelvic girdles of the two *nesiotis* skeletons were compared with four of *comeri*. The following further measurements are given: the greatest dorsal width (c), the length of the dorsal outer edge of the ischium (d), and the dorsal length of the ilium, from outer edge of ischium to anterior fusion with the dorsal vertebral processes (e). Averages of measurements of *comeri* are given in brackets. All measurements are in millimetres:

	G. n. nesiotis	*G. n. comeri*
a.	31.2, 32.5	35.3–39.5 (37.1)
b.	16.0, 16.6	18.0–20.5 (19.0)
c.	25.5, 26.0	26.5–30.8 (28.8)
d.	12.2, 13.6	14.0–14.6 (14.3)
e.	25.8, 27.4	30.0–33.9 (31.9)

(*Note:* Sclater gives 1.35 inches for "a", which equals 33.7–33.8 mm. The 32.5 mm given above is probably from the same sternum).

The above suggests that the Tristan bird was of much less heavy build than the Gough Island bird, even though it would be better to have more material. It is not unlikely that more bones can be found in the peatbogs near the Settlement on Tristan. Within the Settlement area one might even expect to dig up remains from previous century meals, remembering that the species was excellent eating. Though it has been suggested, it would be fruitless to search for odd surviving Island Hens on Tristan, because in the last decades several attempts have been made to introduce the indistinguishable Gough Island Gallinule there (Swales pers. comm.).

THE GALLINULES OF BULLOCK'S AUCTION

Bullock's "London Museum" contained many birds from Tristan da Cunha, presumably collected by Carmichael in 1816–17. Carmichael is the only likely person to have collected them, although there is no proof of this (Stresemann *in litt.*). Unfortunately Bullock disposed of his collections by auction sale in 1819. Two annotated sale catalogues are known, in the Cambridge Museum and British Museum respectively. Two gallinules from Tristan were sold to either Dr. Leach, who represented the B.M., or to a Mr. Winn (here the two catalogues disagree). Based on their absence in the B.M., Sharpe (1906) concluded that Winn was the buyer. A third one was purchased by a Mr. Ryall. All three specimens disappeared, but it would be worth while to try and trace them, since they would considerably add to the knowledge of "true" skins.

From the Cambridge copy of Bullock's sale catalogue, it seems that Winn attended the fifth and sixth days of the 26-days sale. On the fifth day he purchased a variety of rather common water birds, without any clue as to where to look for them. On the sixth day he bought several objects that may well be found in some county or local museum. He then spent £92 for an exclusive collection including Pacific feather hats and cloaks, war-clubs, funeral dresses, cloth-beaters, bread-pounders, nose flutes, a fly flap made of the bone of the arm of a chief taken in battle, etc. Many things came from Otaheite, possibly in the Pacific. Two possible "indicators" are the superb feather cloak, presented to Captain Cook, shortly before his death, by the King of Owyhee, and a Roman sandal found in Hawford Moss, Cheshire.

Ryall was somehow connected with a Mr. Hall, because on the fourth day he bought for Hall. Both attended several days of the sale. Hall purchased a variety of birds from all over the world, none of which gives a clue as "indicator". Ryall too obtained all kinds of birds, though mostly British ones. There is only one possible "indicator-bird", being a roller, shot on the Isle of Sanday, Orkneys, in 1818. However, this bird is not mentioned in the careful study of Baxter & Rintoul (1953), which enlarges the probability that Ryall's collections perished.

The author realises that the hope of tracing any of Bullock's Island Hens is extremely small. Nevertheless, anyone who can give any possible information either about Winn, Ryall, or Hall, or about the "indicators", is kindly requested to write to A. J. Beintema, c/o Zoologisch Museum afd. Vogels, Plantage Middenlaan 53, Amsterdam, The Netherlands. (The spelling of "Wynn" and "Ryall" may be changed.).

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I am greatly indebted to Dr. J. Wattel, curator of birds of the Zoological Museum, Amsterdam, who called my attention to the problem, and gave invaluable advice throughout this study. During a visit to Cambridge Dr. Wattel also kindly made an initial study on the skeletal material of *G. nesiotis* for me, before I was able to do so myself. I wish to thank Mr. C. W. Benson, Cambridge, who made material available, and who greatly helped me in finalising this paper; Dr. D. W. Snow and his colleagues at Tring, for making specimens available; and Sir Hugh Elliott, who made useful comments on a first draft. I also wish to thank Professor J. M. Winterbottom, who kindly lent me specimens from the Keytel Collection in the South African Museum.

SUMMARY

In recent years it has been suggested that the three specimens of *Gallinula nesiotis* claimed to have emanated from Tristan da Cunha, in reality were collected on Gough Island, and that the Tristan form was non-existent. From old records it appears that not only did the species live on Tristan, but also that at least 15 specimens are claimed to have been collected there. Of these, seven or eight have been traced and examined by the author or others. The only completely authentic material is a skin and an incomplete skeleton in the British Museum (Natural History), and another incomplete skeleton in the University Museum of Zoology, Cambridge. The skin of *G. n. nesiotis* of Tristan is indistinguishable from those of *G. n. comeri* of Gough Island. But the two forms appear separable on skeletal measurements, which indicate that the latter is of heavier build. Although *comeri* still survives, *nesiotis* became extinct towards the end of the last century.

References:

Allen, J. A. 1892. Description of a new Gallinule from Gough Island. *Bull. Amer. Mus. Nat. Hist.* 4: 57–58.

Barrow, M. K. 1910. *Three years in Tristan da Cunha*. London: Skeffington.

Baxter, E. V. & Rintoul, L. J. 1953. *The Birds of Scotland*, vol. 1. Edinburgh: Oliver & Boyd.

Brander, J. 1940. *Tristan da Cunha*, 1506–1902. London: Allen & Unwin.

Broekhuysen, G. J. & Macnae, W. 1949. Observations on the birds of the Tristan da Cunha islands and Gough island in February and early March, 1948. *Ardea* 37: 97–113.

Bullock's Museum Sale Catalogue, 1819.

Busk, G. 1869. (on additions to the menagerie). *Proc. Zool. Soc. Lond.* 1869: 469.

Carmichael, D. 1818. Some account of the Island of Tristan da Cunha and of its natural productions. *Trans. Linn. Soc.* 12: 483–513.

Earle, A. 1832. *A narrative of a nine month's residence in New Zealand in* 1827; *together with a journal of a residence in Tristan D'Acunha, an island situated between South America and the Cape of Good Hope*. London: Longmans.

Eber, G. 1961. Vergleichende Untersuchungen am flugfähigen Teichhuhn *Gallinula chl. chloropus* und an der flugunfahigen Inselralle *Gallinula nesiotis*. *Bonn. Zool. Beitr.* 12 (3/4): 247–315.

Elliott, H. F. I. 1957. A contribution to the ornithology of the Tristan da Cunha group. *Ibis* 99: 545–586.

Gadow, H. 1910. On the ornithological collections of the University of Cambridge. *Ibis* (9) 4: 47–53.

Greenway, Jr., J. C. 1967. *Extinct and vanishing birds of the world*. Revised edition. New York: Dover Publications.

Gurney, J. H. 1853. (on a wingless bird of Tristan da Cunha). *Zoologist*: 4017.

Holdgate, M. W. 1958. *Mountains in the sea*. London: Macmillan.

Layard, E. L. 1856. (note on specimens collected by Captain Nolloth). *Nautical Mag.* 25: 414–415.

— 1869. Further notes on South African Ornithology. *Ibis* (2) 5: 361–378.

Matthews, G. M. 1932. The Birds of Tristan da Cunha. *Novit. Zool.* 38: 13–48.

Moseley, H. N. 1892. *Notes by a naturalist on H.M.S. 'Challenger'*. Revised edition. London: Murray.

Nicoll, M. J. 1906. On the birds collected and observed during the Voyage of the 'Valhalla'. *Ibis* (8) 6: 666–712.

Nolloth, M. S. 1856. Visit of H.M.S. 'Frolic' to Tristan da Cunha. *Nautical Mag.* 25: 400–413.

Peringuey, L. 1910. (on collections from Tristan da Cunha). *Report of the South African Museum for the year ended* 31*st December* 1909: 7–8.

Sclater, P. L. 1861. On the Island-hen of Tristan d'Acunha. *Proc. Zool. Soc. Lond.* 1861: 260–263.

— 1878. On birds collected during the voyage of the 'Challenger'. *Proc. Zool. Soc. Lond.* 1878: 577.

— 1881. On the birds collected on the Atlantic Islands and Kerguelens Land, and on miscellaneous collections. *Rep. Sci. Res. Voy. 'Challenger'*. Zoology 2.

Sharpe, R. B. 1894. *Catalogue of the Birds in the British Museum*. Vol. 23. London: British Museum (Nat. Hist.).

— 1906. Birds in: *The History of the Collections contained in the Natural History Departments of the British Museum*. Vol. 2. London: British Museum (Nat. Hist.).

Sperling, R. M. 1872. Letter on Tristan da Cunha. *Ibis* (3) 2: 74–79.

Stirling, W. 1843. *Narrative of the wreck of the ship 'Tiger', of Liverpool (Capt. Edward Searight), on the desert island of Astova, on the morning of the* 12*th of August* 1836. (Original copy not seen). Exeter: Roberts.

Stresemann, E. 1953. Birds collected by Capt. Dugald Carmichael on Tristan da Cunha 1816–1817. *Ibis* 95: 146–147.

Thomson, C. W. 1877. *Voyage of the Challenger. The Atlantic*. Vol. 2. London: Macmillan.

Verne, J. Undated. *Les enfants du capitaine Grant*. Seen in Dutch translation: *De kinderen van kapitein Grant. 2. Australie.* 11th print 1949. Amsterdam: Elsevier. (Date of original print not ascertained.)

Warren, R. L. M. 1966. *Type specimens of birds in the British Museum (Natural History)*. Vol. 1. Non-Passerines. London: British Museum (Nat. Hist.).

Willemoes Suhm, R. von 1876. On observations made during the Voyage of H.M.S. *'Challenger'*. *Proc. Roy. Soc.* 24: 569–585.

Winterbottom, J. M. 1958. Tristan da Cunha birds. *Ibis* 100: 285.

On the breeding and migratory status of *Apus berliozi bensoni*

by R. K. Brooke

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Brooke (1971a) knew nothing of the breeding of Forbes-Watson's Swift *Apus berliozi bensoni* Brooke (1969), merely noting that all known specimens were taken on the coast of Kenya in December and January in non-breeding condition. Brooke (1971a) showed that in north-eastern Africa most swift breeding takes place between March and September. This also seems to apply to *A. b. bensoni*. The National Museums of Rhodesia in Bulawayo have an adult male specimen of *A. b. bensoni* collected by A. R. Tribe on 27 June 1958 at Borama in extreme north-western Somalia with testes slightly enlarged which had previously been reported as the only Somali record of *A. barbatus roehli* (see Brooke 1970). On realizing the error and since it was some years since *A. b. bensoni* was examined and described the specimen was sent to Dr. Richard L. Zusi of the U.S. National Museum of Natural History in Washington for comparison with the type and paratypes. He advises (*in litt.*) "It definitely agrees with *A. berliozi bensoni*, and is darker and browner than *A. b. berliozi*, as well as having shaft streaks on the throat. In fact its shaft streaks are more extensive than those of the type, i.e. occurring on the lower throat as well as on the chin, and certainly more developed than in other specimens of *bensoni*, some of which essentially lack the streaks. I would not hesitate to call your bird *bensoni*." The mensural data of the Somali specimen of *A. b. bensoni* agree well with the ranges given for this race in Brooke (1969): wing 174, tail 72, tail fork 27, delta length 5.5, culmen 8.5 mm. Except for the tenth (outermost) primaries which are old, the wings show no sign of moult or need to moult.

It appears that *A. b. bensoni* is a migrant, breeding in summer in the mountains of north-western Somalia (and doubtless adjacent Ethiopia) and wintering on the coast of Kenya, the type locality being in its winter quarters. This situation is unusual since swifts in their winter quarters seldom fly low enough to be shot and do not come to ground to roost (Brooke 1971b on *A. affinis nipalensis*). Hence it is normal for swift series to be obtained chiefly on their breeding grounds. The other barred swift of northern Somalia *A. niansae somalicus* is also a breeding summer visitor there (Brooke 1970) and winters in Kenya and southern Somalia. It is possible that the field notes on this latter species in Archer & Godman (1961) apply to both species though it does not appear that they thought they were dealing with two species.

I am obliged to Dr. Richard L. Zusi for examining and reporting on the Somali specimen at my request and to the Keeper of Ornithology of the National Museums of Rhodesia for facilities for study.

References:

Archer, G. & Godman, E. M. 1961. *The birds of British Somaliland and the Gulf of Aden* III. Edinburgh: Oliver & Boyd.

Brooke, R. K. 1969. *Apus berliozi* Ripley, its races and siblings. *Bull. Brit. Orn. Cl.* 89: 11–16.

— 1970. Geographical variation and distribution in *Apus barbatus*, *A. bradfieldi* and *A. niansae* (Aves: Apodidae). *Durban Mus. Novit.* VIII (19): 363–374.

— 1971a. Breeding of swifts in ethiopian Africa and adjacent islands. *Ostrich* 42: 5–36.

— 1971b. Geographical variation in the Little Swift *Apus affinis* (Aves: Apodidae). *Durban Mus. Novit.* IX (7): 93–103.

African passerine bird weights

by P. R. Colston

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The following list contains 239 weights for 98 species collected in Kenya in 1970. For those of non-passerine birds already published, see Colston (1971). The format is the same. Order and nomenclature follow White (1960–63, 1962–63), except as qualified. Co-ordinates for less well-known localities have already been given (Colston 1971). For a number of the species there are few or no available weight data previously published to date.

Galerida cristata: ♂♂ 32, 33; fl. 33, 35; Lokori, May.
Eremopterix signata: ♂♂ 15, 16; fl. 15, 15, 15; ♀ 16; Lokori, May.
Anthus sokokensis: ♀ 16; Sokoke, April.
Macronyx croceus: Fl. 58; Kilifi, April.
Eurocephalus anguitimens: Fl. 51; Lokori, May.
Prionops cristata: ♀ 46; Lokori, May.
Sigmodus scopifrons: Ad. 29; fl. 33; Sokoke, April.
Nilaus afer: ♂ 17; imms. 14.5, 16.5; Lokori, May.
Lanius somalicus: ♂♂ 40, 48; Lokori, May.
Laniarius funebris: ♂ 49; fl. 41; Lokori, May.
Laniarius aethiopicus: Fl. 42; Sokoke, April.
Malaconotus sulfureopectus: ♂ 30; ♀ 30; Lokori, May.
Malaconotus blanchoti: ♂ 78; Lokori, May.
Oriolus auratus: ♂♂ 74, 75; fl. 70; Sokoke, April.
Oriolus larvatus: ♂ 59; Sokoke, April.
Dicrurus adsimilis: Fl. 34, 36; Lokori, May.
Lamprotornis purpuropterus: ♀ 101; fl. 100; Lokori, May–June.
Cinnyricinclus leucogaster: ♀ 45; Lokori, May.
Speculipastor bicolor: Fl. 71; Lokori, May.
Spreo superbus: ♂ 64; fl. 50, 59; Lokori, May.
Creatophora cinerea: Fl. 71; Lokori, May.
Buphagus erythrorhynchus: Fl. 42, 47; Lokori, May.
Campephaga phoenicea: ♂ 30.4; Kakamega, March. Subspecies *C. p. petiti.*
Pycnonotus barbatus: Fl. 39; Lake Kanyaboli, March.
Pycnonotus dodsoni: ♂ 30; Lokori, May.
Andropadus curvirostris: ♂♂ 24, 28; ♀ 26; Kakamega Forest, June.
Andropadus importunus: ♂ 30; fl. 25; Sokoke, April.
Andropadus latirostris: ♂ 31; ♀♀ 26, 27, 29; fl. 26.5, 27, 31, 32; Kakamega, June.
Andropadus masukuensis: ♂♂ 24, 26; fl. 25; Kakamega, June.
Chlorocichla flaviventris: ♀ 39; fl. 50; Sokoke, April.
Phyllastrephus strepitans: ♂♂ 24, 24; Lokori, May. ♀ 19; Sokoke, April.
Phyllastrephus terrestris: Fl. 32, 32, 36, 37; Sokoke, April.
Phyllastrephus fischeri: ♂♂ 30, 30, 34; ♀♀ 23, 25, 28; fl. 25, 25, 27, 29, 33; Sokoke, April.
Phyllastrephus cabanisi: ♀♀ 22.5, 26; Kakamega, June. Apparently not conspecific with *P. fischeri* as per White (1962: 92): see Ripley & Heinrich (*Postilla* 96, 1966: 13–15) and Benson, Brooke, Dowsett & Irwin (*Arnoldia, Rhodesia* 4 (40), 1970: 27).
Phyllastrephus debilis: ♂♂ 16, 16; ♀ 12; sex? 15; fl. 13.5, 16; Sokoke, April.
Bleda syndactyla: ♂ 51; fl. 43; Kakamega, June.
Nicator chloris: ♂ 54; ad. 35; fl. 40; Sokoke, April.
Cercomela scotocerca: ♂ 20; Lokori, May.
Cercotrichas leucophrys: ♂ 18.5; Lake Kanyaboli, March. ♂ 17.5; ♀ 16; Lokori, May.
Cercotrichas quadrivirgata: ♂ 25; ♀ imm. 16; ad. 28; fl. 24; Sokoke, April.
Cichladusa guttata: ♀ 29; ad. 28; fl. 29.5; Lokori, May.
Alethe poliocephala: ♂♂ imm. 29.5, 31; ♀♀ 25, 28; Kakamega, June.
Sheppardia aequatorialis: ♂♂ 15, 17; ♀ 15; juv. 12.5; Kakamega, June.
Cossypha natalensis: ♂♂ 29, 32; Sokoke, April.
Cossypha cyanocampter: ♂ 31; Kakamega, June.
Neocossyphus rufus: ♂ 65; ♀ 53; fl. 63; Sokoke, April.
Turdus fischeri: Ad. 56; Sokoke, April.

Trichastoma fulvescens: ♂ 28; ♂ juv. 27; Kakamega, June.

Trichastoma rufipennis: ♀ 22; juv. 23; Kakamega, June.

Trichastoma albipectus: ♂ 32; Kakamega, June.

Turdoides rubiginosus: ♂♂ 44, 45; fl. 48; Lokori, May.

Muscicapa adusta: ♀ 12; Kakamega, June.

Bradornis microrhynchus: ♂♂ 16.5, 17, 17, 18, 19.5; juv. ♂ 16; ♀♀ 15, 16, 19; juv. ♀ 15.5; fl. 16.5; Lokori, May.

Batis capensis: ♂ 12; ♀ 12; Sokoke, April.

Batis perkeo: ♂♂ 8, 8, 8, 8, 8, 9; Lokori, May.

Platysteira blissetti: ♂ 11; ♀ 12.5; Kakamega, June.

Trochocercus cyanomelas: ♂♂ 9, 10; ♀ 9; Sokoke, April.

Trochocercus nigromitratus: ♂ 10; ♀ 9; Kakamega, June.

Terpsiphone viridis: ♂♂ 14, 15; ♀ 13.5; Lokori, May.

Phylloscopus budongoensis: ♀ 8.5; sex? 8.4; Kakamega, March–June.

Cisticola galactotes: Ad. 10; Sokoke, April. Fl. 15; Mida Creek, April.

Cisticola chubbi: ♂ 21; Kakamega, June.

Prinia subflava: ♂ 10; Sokoke, April.

Prinia somalica: ♀ 7.5; Lokori, May.

Prinia leucopogon: ♂ 13; ♀ 12; Kakamega, June.

Prinia bairdi: ♂♂ 14, 14; Kakamega, June.

Apalis flavida: ♀♀ 7.5, 8; fl. 7; Lokori, May.

Apalis melanocephala: ♂ 9.5; Sokoke, April.

Apalis rufifrons: Fl. 7, 7; Lokori, May.

Bathmocercus rufus: ♂ 19; ♀ 16; fl. 14, 16; Kakamega, June.

Camaroptera chloronota: ♂ 12; Kakamega, June.

Camaroptera brevicaudata: ♂♂ 8, 9; fl. 9, 9.5; Sokoke, April. ♂ 11.5; Lokori, May.

Calamonastes simplex: ♂ 12; ad. 11.5; fl. 14.5; Lokori, May.

Eremomela turneri: ♂ 9; Kakamega, March.

Sylvietta brachyura: ♀ 8; fl. 8; Lokori, May.

Hylia prasina: ♀ 11; Kakamega, June.

Nectarinia pulchella: ♂ 8.5; Lake Kanyaboli, March. ♂ 7; ♀ 7; fl. 7.5; Lokori, May.

Nectarinia verticalis: ♂ 15; Kakamega, June.

Nectarinia olivacea: ♀♀ 8, 8; fl. 7, 7, 8.5; Sokoke Forest/Mida Creek, April. ♂ 11; ♀ 10.5; Kakamega, June.

Anthreptes collaris: ♂ 8; Kakamega, June.

Anthreptes rectirostris: ♂ 10; ♀ 10; Kakamega, June.

Anthreptes orientalis: ♂ 11.5; Lokori, May.

Serinus dorsostriatus: ♂ 18; Lake Kanyaboli, March.

Serinus citrinelloides: ♂ 14; Kakamega, June. This specimen belongs to the recently described *S. c. brittoni* Traylor (*Bull. Brit. Orn. Cl.*, 1970: 85).

Ploceus intermedius: ♂♂ 24, 25; ♂ fl. 26; Lokori, May.

Ploceus luteolus: ♂♂ 12.5, 14; ♀♀ 13, 14.5; fl. 13, 13.5; Lokori, May.

Ploceus rubiginosus: ♂ 37; Lokori, May.

Ploceus bicolor: ♂ 34; ♀ 25; Kakamega, June.

Spermophaga ruficapilla: ♂ 24; ♀ 24.8; Kakamega, March–June.

Passer griseus: Fl. 36; Lokori, May.

Passer castanopterus: ♂ 17; Lokori, May.

Plocepasser mahali: Fl. 35; Lokori, May.

Dinemellia dinemelli: Fl. 61, 65; Lokori, May.

Vidua macroura: ♂ 15; Kakamega, June.

Vidua fischeri: ♂ 15; Lokori, May.

Hypargos niveoguttatus: ♂ 12; Sokoke, April.

Hypargos nitidulus: ♂♂ 7, 8.5; Sokoke, April. ♂ 10; Kakamega, June.

Pytilia melba: ♂ 16; fl. 14, 15.5; Lokori, May.

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References:

Colston, P. R. 1971. Additional non-passerine bird weights from East Africa. *Bull. Brit. Orn. Cl.* 91: 110–111.

White, C. M. N. 1960–63. *Revised check lists of African passerine birds* (except Sylviinae). Lusaka: Govt. Printer.

— 1962–63. A check list of the Ethiopian Muscicapidae (Sylviinae). *Occ. Papers Nat. Mus. S. Rhod.* 24B: 399–430, 25B: 653–738.

CONTRIBUTORS

Contributions are not restricted to members of the Club. They should be addressed personally to the Editor, C. W. Benson, Department of Zoology, Downing Street, Cambridge. Contributions are accepted on condition that sole publication is offered in the first instance to this *Bulletin*. They should be type-written, double-spaced, with wide margins, on one side of the paper, and submitted in duplicate.

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21 AUG 1972

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CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, R. E. F. Peal, 24 Creighton Avenue, London N.10.

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Edited by
C. W. BENSON

Volume 92 No. 5 October 1972

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Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 92 No. 5 Published: 20th October, 1972

The six hundred and seventy-eighth meeting of the Club was held at the Café Royal, 68 Regent Street, London W.1., on Tuesday, 19 September, 1972 at 7 p.m.

Chairman: Mr. J. H. Elgood; present: 23 members and 12 guests.

The first speaker was Sir Landsborough Thomson, C.B., O.B.E., who addressed the Club on a re-assessment of ringing results for the Gannet, illustrated with coloured slides.

Dr. J. G. Harrison, O.B.E., then spoke on "Persian Panorama", illustrated with coloured slides by Dr. Pamela Harrison.

A King Penguin in the Magellan Strait

by Janet Hauff

Received 29th May 1972

To judge from the very few records of the King Penguin *Aptenodytes patagonica* given by Humphrey *et al.* (1970, *Birds of Isla Grande (Tierra del Fuego)*, Smiths. Inst., Washington), it is of interest to record that on 11th January, 1969, while visiting Isla Magdalena (70° 35′ W., 52° 55′ S.) in the Strait of Magellan, Chile, I saw and photographed a solitary King Penguin on the beach near to the historically well known colony of Magellanic Penguins *Spheniscus magellanicus*.

[A photograph of the subject of the above note has been deposited in the University Museum of Zoology, Cambridge—Ed.]

The Guanay Cormorant *Phalacrocorax bougainvillii* nesting on the Atlantic coast of South America

by Francisco Erize

Received 17th May 1972

In January 1967, I took some photographs at a cormorant colony at Point Tombo, 65° 20′ W., 44° 00′ S., Chubut Province, Argentina, where King Cormorants *Phalacrocorax albiventer* and Rock Cormorants *P. magellanicus* are known to nest. Some months later I noticed that one of the birds on one of my transparencies was a Guanay Cormorant *P. bougainvillii*. This photograph was later published (Erize 1970).

In December 1969 I was again at Point Tombo and found that among the other cormorants about fifty pairs of Guanays were at nests feeding young (see Plate). There appears to be no previous record of the Guanay nesting on the Atlantic coast of South America. Measured by the shortest sea route, the nearest nesting Guanay Cormorants are nearly 3,000 km away on Mocha Island, Chile (Meyer de Schauensee 1970). It is interesting to compare the distribution of the Red-legged Cormorant *P. gaimardi* which also nests along

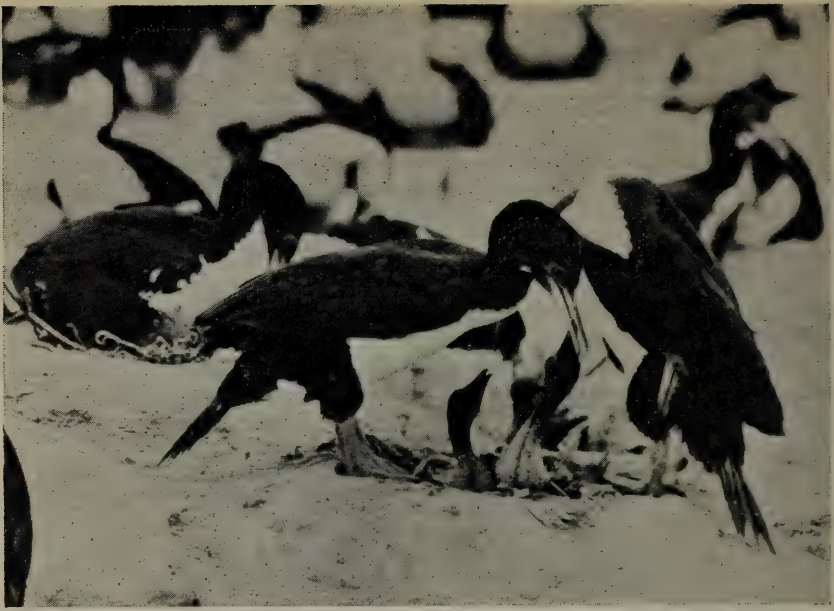


Plate. Adult and young Guanay Cormorants *Phalacrocorax bougainvillii* nesting at Point Tombo, Argentina, on the Atlantic coast of South America, December 1969. By Francisco Erize.

the Pacific coast of South America and also has one small known breeding outpost in Argentina (near Puerto Deseado in Santa Cruz Province). It seems not unlikely that both species nest at other points along the Argentine coast.

References:
Meyer de Schauensee, R. 1970. *A Guide to the Birds of South America.* Narberth, Penn.: Livingston.
Erize, Francisco. 1970. Cormorants of South America. *Animals* 13 (5): 235–237.

Some Notes on the birds of Point Tombo, Argentina

by Jeffery Boswall & Robin J. Prytherch

Received 17th May 1972

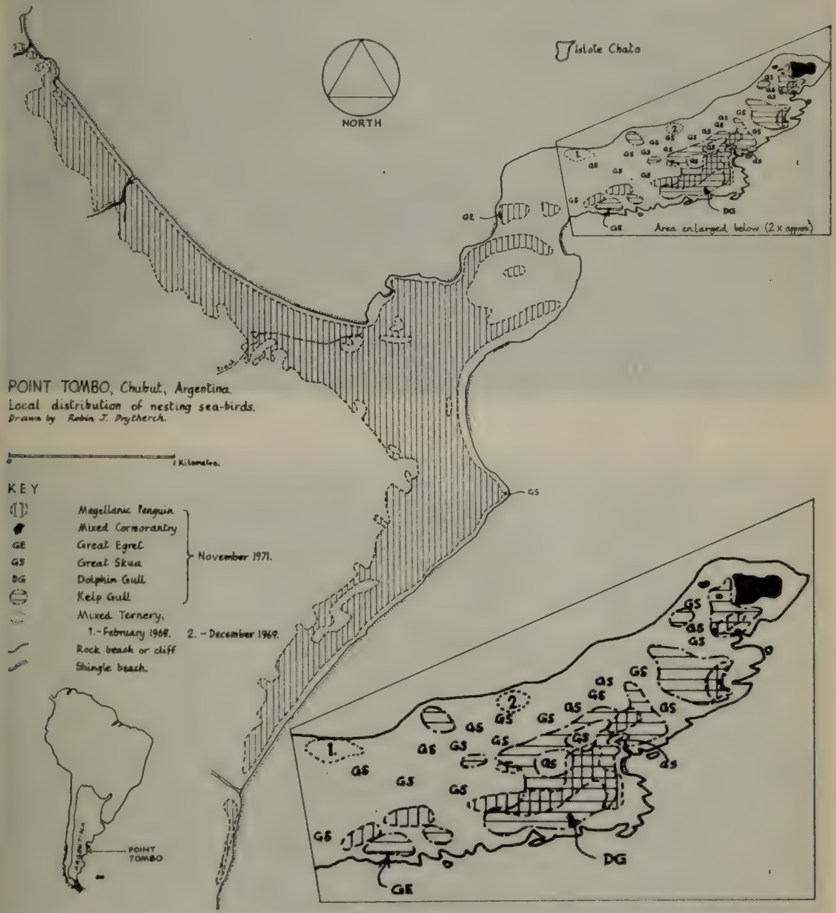
INTRODUCTION

In company with Douglas Fisher (professional photographer) and Donaldo MacIver (interpreter) we camped at Point Tombo, Chubut Province, Argentina, from 13th to 19th November 1971. Our primary purpose was to film the wildlife for BBC television, but some ornithological observations were made and are set out in this paper.

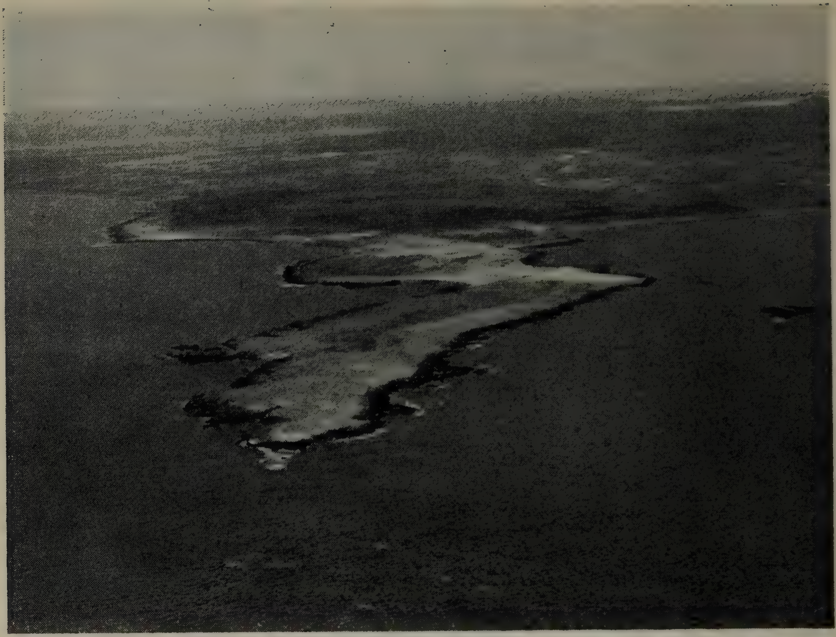
Point Tombo is a thin promontory which juts north-eastwards into the South Atlantic Ocean at approximately 44° 00′ S and 65° 20′ W. It is about 3·1 km long by 0·6 km wide at its widest (see figure and plate 1). The promontory is a rock outcrop covered with a layer of sand and shingle. The rock slopes up from the north-west shore to produce rugged cliffs up to about

15 m high along the south-east-facing shore. Vegetation is sparse; some grasses grow on the higher areas of sand, while towards the landward end, bushes are frequent (plate 2).

In the limited time at our disposal for ornithology we decided to concentrate on the nesting seabirds of the point, i.e. the gulls, terns, skuas, cormorants and penguins: their local distribution, numbers, and stage in the breeding cycle. However, notes on all birds seen are also included since comparatively little has been published from Patagonia, particularly in English. English and scientific nomenclature and species sequence follow Meyer de Schauensee (1970). Our observations are confined to the point and the extent of the penguin colony north-west and southwards along the coasts from the landward end of the point. Since no large scale map of the Point Tombo area could be located before our visit, R.J.P. made a field map (see figure) which was later found to compare very favourably with an aerial photograph.


NORTH
Islote Chato
Area enlarged below (2 x approx)
POINT TOMBO, Chubut, Argentina.
Local distribution of nesting sea-birds.
Drawn by Robin J. Drytherch.
0
1 Kilometre.
KEY
Magellanic Penguin
Mixed Cormorantry
GE Great Egret
GS Great Skua
DG Dolphin Gull
Kelp Gull
November 1971.
Mixed Ternery,
1.-February 1968. 2. - December 1969.
Rock beach or cliff
Shingle beach.
POINT TOMBO
ARGENTINA
GE
GS
DG
1.
2.

To get to Point Tombo, one can travel south from Trelew along provincial route 1 to a point a few kilometres south of the hamlet of Dos Pozos,



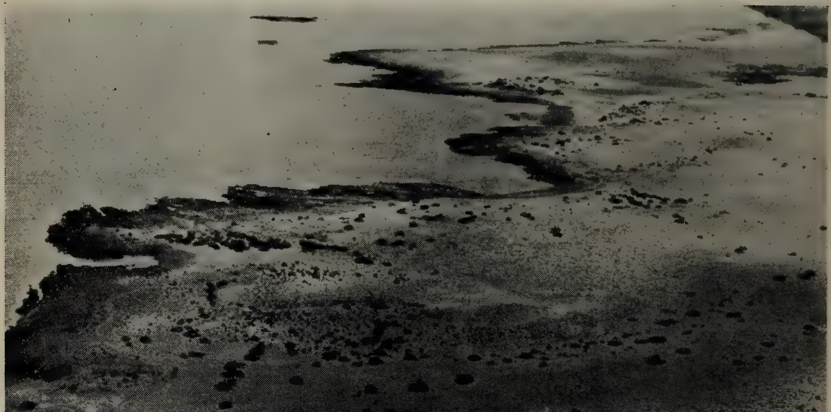
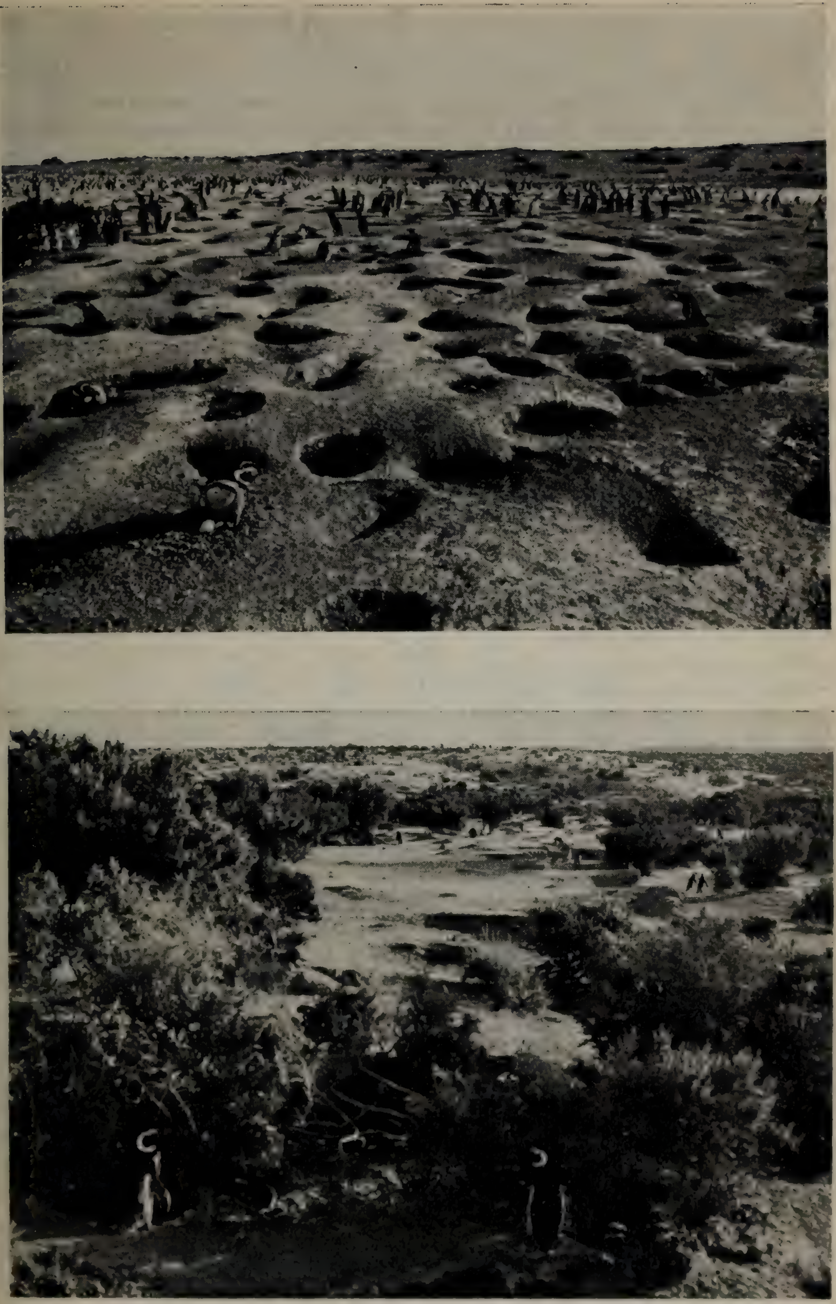


Plate 1 (upper). Point Tombo, Province of Chubut, Argentina, looking south-south-west. Plate 2 (lower). Colony of Magellanic Penguins *Spheniscus magellanicus* at Point Tombo; part of colony, looking north-north-west (with exception of point of land at top, almost whole area occupied by penguins). Both by Douglas Fisher.



Colony of Magellanic Penguins *Spheniscus magellanicus* at Point Tombo. Plate 3 (upper), burrows. Plate 4 (lower), scrapes at base of bushes. Both by Jeffery Boswell.

where a gate marked Estancia La Perla has beside it a large notice prohibiting entry to Point Tombo in the interests of preserving the ecology of the area. Visitors are urged to go instead to Camarones where, for example, penguins can also be seen. Permission to enter needs to be sought from the Director Provincial de Turismo, Casilla de Correo 14, Rawson, Provincia del Chubut, Argentina. However, five parties of casual visitors turned up during our week there and international tourist groups are taken to the point occasionally. There is a need to control visitors, particularly to the cormorantry.

We were too early in the season to expect terns to be nesting. These are the only seabirds, so far as we are aware, that were already known to breed or to have bred at Point Tombo in numbers that we did not ourselves see and we therefore solicited information about their status there from Francisco Erize and C. C. Olrog. Reference is also made under species headings to some of the observations made by Henry Durnford (1878) when he visited the point from 26th to 30th December 1877.

SPECIES LIST

Spheniscus magellanicus, Magellanic Penguin: Easily the most widespread seabird (plate 2). Wherever the open ground allowed, birds burrowed into it (plate 3); as many if not more burrowed or made scrapes under bushes (plate 4) and a few others were entirely in the open on sandy or rocky ground and even on the broken cliffs. As the figure shows, the largest continuous area of occupation is at the landward end of the peninsula and along the coast to the north-west and the south.

When we arrived on 13th November, most birds were on eggs and 100 occupied and defended sites included four that were empty, 15 with one egg, 48 with two eggs, one with three eggs, seven with one chick, nine with one egg and one chick, and 16 with two chicks. Many eggs were chipping and by the day we left a large majority of birds appeared to have chicks. Thus the peak of hatching was probably about 15th November. If the incubation period is thirty-nine days as in the very closely related *S. demersus* of South Africa (McLachlan & Liversidge 1970), then the peak of laying would have been 7th October, which is more or less consistent with fresh eggs being collected in the Falkland Islands 10th–25th October (Maurice Rumboll in discussion 1972). Commenting on 28 days as given by Kearton (1930) for *S. demersus*, B. Stonehouse (pers. comm. May 1972) said, "I suspect this may be short by 5–6 days". R.J.P. and Douglas Fisher visited a colony (of perhaps 10,000+ pairs) at Cabo dos Bahias, 44° 47′ S., 65° 32′ W, south of Camarones, Province of Chubut, on 29th January 1972; R.J.P. noted at the time, "General atmosphere much quieter than at Point Tombo in November, with almost no ecstatic calling. Only constant noise was hunger cries. Most young still near nests were in post downy stage, a few with some down and only a handful all downy. Many full grown young on beach entering water and loafing with adults. Most broods of two, but difficult to check this due to tendency of young to crèche".

By 16th April 1972, when Douglas Fisher visited Punta Santa Elena, 44° 33′ S., 65° 18′ W., just south of Point Tombo, the colony of several thousand nests was virtually deserted: only 200 birds were present in all, scattered in very small groups. Thus it seems that Chubut birds are probably ashore in numbers from late September to late March.

To estimate the number of occupied sites, R.J.P. plotted on his field map (see figure) the areas occupied more or less continuously by penguins, ignoring individual sites and very small groups. The areas totalled 2·23 sq.

km. (±15%). Within this area we determined the density of burrows and surface sites in squares 10 x 10 m. Counts ranged from eighty sites in densely occupied squares to one or two sites in sparse areas. Our very rough estimate is that nests averaged twenty per 100 sq. m, or 446,000 breeding pairs in all. We should mention here that throughout the colony, but particularly along the inland edge and mainland extremities, there was a noticeable proportion of paired birds defending sites without eggs or young. These pairs are included on our estimate of the total population. In addition, there were many apparently unattended nest sites, both within the colony and beyond the area indicated on the figure, not included in the survey.

In December 1969, James King and C. C. Olrog (pers. comm. February 1972) estimated 600,000 pairs at Point Tombo, a figure close to ours in the circumstances. Conway (1971) estimated that "more than 200,000 Magellanic Penguins congregate" at Point Tombo, presumably meaning 100,000+ pairs. The only other sizeable Argentine colony of this species for which a census exists appears to be that on Islas Tova and Tovita, Province of Chubut (66° 01′ W., 45° 05′ S.), where Herrero (1970) estimated on 15th October 1970 (by which date not all birds may have come ashore) 33,040 occupied nest sites. Carrara (1952) suggests a total population in Argentina of 320,000 to 350,000 individuals (presumably meaning 160,000 to 175,000 pairs nesting in any one year), which can surely only be a very considerable underestimate. Carrara lists many of the colonies, but not all, excluding for example Islas Tova and Tovita (Herrero *op. cit.*) and Staten Island (64° 02′ W., 54° 43′ S.), where there are three colonies (H. Meade Cadot pers. comm. 1972).

Point Tombo appears to be the northernmost colony of this species on the Atlantic coast apart from 50 pairs reputed to nest at Punta Leon south of Punta Ninfas (64° 30′ W., 43° 05′ S.) (Pablo Korschenewski in discussion 1972). Murphy (1936) says the species breeds further north, "from the Gulf of San Matias, Argentina, southward . . .", but his only evidence seems to be that Magellan first saw "strange geese" in this gulf. It was further south that Magellan's diarist Pigafetta (Pinkerton 1812: 313) records that "we stopped at two islands" and "caught a sufficient store for the five ships in the space of a single hour". The islands were near Port Desire (Puerto Deseado) (Pinkerton *op. cit.*). Accepting Murphy (1936), Stonehouse (1957: 161) refers to Magellanic Penguins breeding on the Valdes Peninsula, which is immediately south of the Gulf of San Matias, but so far as I can ascertain they have not bred and do not breed there.

A world list of the known nesting places of *Spheniscus magellanicus* has been deposited in the Alexander Library of the Edward Grey Institute at Oxford.

Korschenewski (1969a) has written on the nidification of this species at Point Tombo, but his paper is so obviously inaccurate and so emotionally toned that we have not quoted from it.

Durnford (1878) makes no mention of this species at Point Tombo and yet he was there for five days at the end of December and specifically says in the second of his two papers (1877 and 1878) on the birds of central Patagonia that he "thought it advisable to go through the whole list of birds again". The conclusion that there were none present at the time of his visit, though surprising, seems inescapable.

We saw one almost complete albino, and two partial albinos. Conway (1965) saw several. At Point Tombo, this species is very tame, refusing for the most part to budge from nests, and allowing a close approach when loafing on the beach. O. S. Pettingill (pers. comm. June 1972) states of *magellanicus*, "In the Falklands they are exceedingly wary. Maurice Rumboll noted this behavioural difference from the birds of Point Tombo as very striking".

E. R. Parrinder (pers. comm. May 1972) who was at Point Tombo on 10th November 1971 "saw several penguins perching in the bushes, one about five feet off the ground". We did not see this.

A bull South American Sea Lion *Otaria byronia*, probably immature, was seen tearing apart and consuming a penguin. It was close to the shore and adjacent to a part of the beach used by penguins for access to the sea. The kill was not actually seen but there seems no reason to suppose that the mammal did not take the penguin. About twenty-five Giant Fulmars *Macronectes giganteus* soon gathered near the seal and were successful in obtaining a considerable part of the prey.

Pterocnemia pennata, Lesser Rhea: Up to three seen together. A randomly laid egg seen in the north-west spur of the penguin colony on 16th November.

Eudromia elegans, Elegant Crested-Tinamou: Up to four together flushed from among the penguin colony.

Podiceps major, Great Grebe: Up to eight seen on sea.

Macronectes giganteus, Giant Fulmar (or Petrel): Singles seen offshore daily. See also above under Magellanic Penguin.

Phalacrocorax olivaceus, Neotropic Cormorant: Up to four seen together.

Phalacrocorax magellanicus, Rock Cormorant, *P. bougainvillii*, Guanay Cormorant and *P. albiventer*, King Cormorant: A mixed colony existed in three separate but very proximate raised areas at the very end of Point Tombo (see figure). Fifty nests of King Cormorants revealed that six were empty, 11 had one egg, 16 had two eggs and 16 had three eggs. The general behaviour suggested most birds were incubating. Of ten nests of Rock Cormorant, eight were empty and two had one egg. Most birds appeared to be nest building. Of ten nests of Guanay Cormorant, one was empty, one had one egg, two two eggs, three three eggs, one four eggs, one two chicks and one two eggs and one chick. The chicks were very small.

It seems that the three species were at different stages in the nesting cycle. From the observations of Erize (pers. comm. November 1971), firstly in February 1968 and February 1969 when only Rock Cormorants still had young, and secondly in December 1969 when the young Guanays were much more developed than the young Kings, it seems that the three species must consistently have different laying dates.

The three areas were fairly flat, sloping slightly to the north-west. The largest area also had small cliffs and less smooth patches along its edges, particularly towards the southern end and it was here that the main concentrations of Rock Cormorant were found. The King and Guanay Cormorants occupied the flatter parts.

The two smaller areas were counted directly. The large area was spaced along parallels to its two axes, giving an oblong 290 x 117 feet, about four-fifths of which was estimated to be covered by nests. Nests were regularly spaced and of a density (three sample areas) of 18 in 100 square feet, giving 4,878 nests. The smallest area had 36 nests of King Cormorant; the middle-sized one 150 King and 10 Rock; and the large area, in rounded figures, 4,300 King, 500 Rock and 60 Guanay. Our guess is that these figures are accurate to within ±10%.

Francisco Erize (1972) first observed the Guanay Cormorant *P. bougainvillii* nesting at Point Tombo in 1969, the bird being previously known as a breeder only from western South America.

Durnford (1878) found about sixty nesting pairs he considered to be "*P. carunculatus*", i.e. the King Cormorant *P. albiventer*. Therefore it seems that the King Cormorant has been overlooked by Olrog (1959, 1968) and Meyer de Schauensee (1970). The nearest breeding localities are given by Olrog (1968) as Puerto Deseado, which is 400 km to the south, or the inland lakes in the province of Neuquen, also 400 km away, but to the north-west. In Olrog (1959) and Meyer de Schauensee (1970), the nearest locality is San Julian, 600 km to the south.

For the Rock Cormorant, Olrog (1959) gives the northerly limits as San Julian and (1968) Cabo Virgenes, 600 km and 925 km respectively south of Point Tombo, and Meyer de Schauensee gives " . . . coast of Argentina n. to Santa Cruz . . ." which includes both of Olrog's limits. Our observations indicate a considerable extension of range northwards.

Casmerodius albus, Great (or Common) Egret: Nests were built in low bushes near the shore on the north-west coast and on low bushes on cliffs on the south-east coast (see figure). One nest was empty, three had three eggs and one had four eggs. Thus four or five pairs were present. The species was seen fishing in low-water rock pools.

Lophonetta specularioides, Crested Duck: A nest with three eggs was found on 17th November. It was in a small crevice on a rocky part of the shore only about 10 m from and nearly 2 m vertically above the high tide mark. It was loosely built of dry seaweed with some down lining. A flock of twelve adults was seen on 14th November.

Tachyeres patachonicus, Flying Steamer-duck: Eight pairs were well spaced along the coastline, on average about 2 km apart. One pair had four young ducklings on 15th November and a nest with five eggs was found on 16th November. The down-lined nest was fairly exposed at the base of a small bush on the shingle beach about 10 m from the high tide mark. Indications at the time were that the species involved was the Flightless Steamer-duck *T. pteneres*. However, we have since been told (Olrog pers. comm. 1972) that previous records for Point Tombo usually refer to the Flying Steamer-duck *T. patachonicus;* in any case the Flightless species has not been known to nest north of Tierra del Fuego in Argentina. A colour photograph of three Steamer-ducks taken at Punta Tombo on 10th November 1971 by E. R. Parrinder was submitted to Jean Delacour and Peter Scott, and they are of the opinion that the birds are Flying Steamer-ducks (a copy of the photo is deposited at the Wildfowl Trust). They also brought to light the interesting fact that the birds in the photograph appear to be in wing moult. During five days at Point Tombo we saw only one steamer duck in flight—and that a very brief fluttering from the nest on the beach down to the water's edge. This fact partly explains why they were first thought to be of the flightless species; more importantly, it supports the idea that most of the local birds were flightless because of wing moult. It is apparently unusual for anatids to go through the wing moult while actually breeding (Janet Kear pers. comm.).

Polyborus plancus, Crested Caracara: Two sightings of probably the same bird.

Haematopus palliatus, American Oystercatcher: About ten pairs were present and behaving as if they had nests or young.

Durnford (1878) observed several nesting pairs.

Haematopus ater, Blackish Oystercatcher: Of five nests found, one contained one egg, three contained two eggs and one three eggs. Probably about twelve pairs in all. Seen by Durnford (1878).

Charadrius falklandicus, Two-banded Plover: One clutch of three eggs found and a pair with large young seen. Perhaps five pairs in all.

Oreopholus ruficollis, Tawny-throated Dotterel: One pair showed some alarm at presence of observer on 15th November. (At Valdes Peninsula, further north, 42° 30′ S., 64° 00′ W., on about 6th November, an adult with a very small chick was observed). Durnford (1878) caught two chicks of this species at Point Tombo, a breeding record overlooked by Olrog (1959) and by Meyer de Schauensee (1970), both authors showing the bird to be exclusively Andean. However, Olrog's later map (1968) shows the species nesting on the steppe of southern Patagonia north along the coast to a point about 250 km south of Point Tombo (and about 500 km south of the Valdes Peninsula).

Calidris fuscicollis, White-rumped Sandpiper: A flock of eighty-one on 15th November. Other smaller feeding groups of about ten seen on other days.

Calidris sp., Sandpiper sp.: Up to twelve seen in a feeding group regularly, probably the Semi-palmated Sandpiper *C. pusilla*. R.J.P. identified these as *C. pusilla* with the help of various books including Robbins *et al.* (1966). Time did not permit a really close examination and a detailed description to be taken, but nevertheless probability is in favour of this species. Strangely, there is only one record of *C. pusilla* from Argentina, in Chubut (C. C. Olrog pers. comm. 1972).

Calidris alba, Sanderling: Two with White-rumped Sandpipers on 14th November.

Thinocorus sp., Seedsnipe sp.: One single bird seen.

Chionis alba, Snowy Sheathbill: At least twenty scattered around the tip of the promontory and in attendance at the cormorantry.

Catharacta skua, Great Skua: With one exception (see figure), skua territories were on the peripheries of the *Larus dominicanus* colonies. Of ten nests, two had one egg and eight had two eggs. Two walks the length of the point without attempting to search out all skua pairs gave nineteen and twenty-one occupied territories. We estimate twenty-five pairs ±10% in all. Skuas were occasionally seen harrying gulls and were also active over the penguin colony. Very bold in its defence of its nest, giving J.B. several very painful clouts on the head, a distinct behavioural difference from birds of the same species nesting in Shetland, Britain, which mob but very seldom make contact. The birds at Point Tombo are of the Falkland race (C. C. Olrog pers. comm. February 1972).

Leucophaeus scoresbii, Dolphin Gull: A tightly packed little colony on rocks near the extremity of the point (see figure) had on 15th November 20 empty nests and six each with one egg. Three days later, most of the nests had at least one egg. These gulls were very persistent attenders at the cormorantry.

The nesting of this species at Point Tombo appears to be an extension of the known breeding range of c. 900 km from the Falkland Islands and 1,000 km from Tierra del Fuego (Meyer de Schauensee 1970), except that Zapata (1965) found them nesting at Cabo Blanca, Santa Cruz Province, at 47° 10′ S., 65° 40′ W., in December 1964, 300 km south of Point Tombo.

Larus dominicanus, Kelp Gull: Mainly on slightly higher ground and usually among large shingle or on rocky outcrops towards the seaward end of the point (see figure). Apparently in the middle of egg-laying. Of 50 freshly built nests on 15th November, seven were empty, 12 had one egg, 17 two eggs, and 14 three eggs. Counts of nests in three 10-metre squares were 20, 17 and 20. Our impression was that the density of nests was pretty even, but that they thinned out slightly along the edges and also at the north-east end of the colony. An average of nests for each 10-metre square is probably therefore nearer 17. The figure gives an area of approximately 0·19 square km. We concluded therefore that if 17 nests per 100 square m is correct, then the number of pairs of gulls with nests was 32,300 ±15%. Durnford (1878) found only about fifty pairs nesting in December 1877.

Sterna hirundinacea, South American Tern: Flocks in hundreds were observed, but were very "flighty" and clearly not yet nesting. Erize (pers. comm. November 1971) found on 25th December 1969 that breeding was only just beginning (see figure). The birds were then present only in hundreds. A few were on eggs but most were courting and mating. During the previous season he had visited the point at a later stage in the cycle (on 10th February 1969) and found tens of thousands of pairs, most of them with young, some with eggs, and some feeding fledglings (see figure). 67,500 nests estimated by Durnford (1878) in late December 1877.

Sterna maxima, Royal Tern: We saw none, but Erize (pers. comm. November 1971) saw about ten in the ternery in February 1968. Pablo Korschenewski in about 1967 collected eggs, chicks and adults of this species at Point Tombo and sent them to Instituto Miguel Lillo in Tucman, Argentina (C. C. Olrog pers. comm. February 1972); see also Korschenewski (1969b). (It is worth adding that at the Valdes Peninsula to the north in December 1969, Erize saw about twenty pairs of Royal Terns tending young chicks in a mixed ternery there). Meyer de Schauensee (1970) says, "Winters, and may breed on all coasts from Colombia and Venezuela south to Pisco, Peru, and Chubut, Argentina". The first ornithologist to show that *Sterna maxima* might have been nesting in Argentina for many years was Escalante (1968, 1970, 1971).

Sterna eurygnatha, Cayenne Tern: We saw no birds of this species but Erize (pers. comm. November 1971) in February 1969 saw about 100 chicks close to fledging in the ternery and estimated that at least fifty pairs were breeding. This species was first shown to nest in Argentina, near Fitz Roy, in Santa Cruz Province, as recently as 1964 (Zapata 1965). It was apparently first reported as a nester from Point Tombo by Korschenewski (1969b).

Zenaida auriculata, Eared Dove: Observed in small scattered flocks of about ten birds, up to thirty being seen in a day. Several pairs were flushed and one nest with two eggs was found on 15th November.

Upucerthia dumetaria, Scale-throated Earthcreeper: Two pairs located in the mainland part of the penguin colony.

Pseudoseisura gutturalis, White-throated Cacholote: Five together in one bush behaved excitedly at presence of observer and were possibly a family party.

Lessonia rufa, Rufous-backed Negrito: One pair showed considerable anxiety as we passed through their "territory", which was centred on a rocky outcrop adjacent to the pebble beach. There were two males and one female in another rocky beach area.

Tachycineta leucopyga, Chilean Swallow: About eight seen in a loose feeding flock on 17th November.

Mimus patagonicus, Patagonian Mockingbird: About seven pairs located mostly close together in an area of high ground in the mainland part of the penguin colony.

Diuca diuca, Common Diuca-finch: At least six singing males heard, all in the mainland part of the penguin colony.

Zonotrichia capensis, Rufous-collared Sparrow: Thinly spread throughout the penguin colony to judge from the number of singing males heard.

MAMMALS

One or two Guanaco *Lama guanicoe* were sighted daily, as were European Hares *Lepus europeaus*. An armadillo, probably the Hairy Armadillo *Zaedyus pichyi*, was seen and about fifty burrows were believed to belong to this species. A few Maras or Patagonian "Hares" *Dolichotis patagorum* were observed and one Southern Cavy *Microcavia australis*. Two large dolphin-like mammals were seen off the point and two female Elephant Seals *Leonina mirunga* appeared on the shore. About ninety South American Sea Lions *Otaria byronia* were present (pupping?) on Islote Chato, the small rock island off the north coast of the peninsula; this "loberia" is not mentioned in Carrara's detailed list of South American Sea Lion colonies (Carrara 1952).

SUMMARY

All species identified at Point Tombo, Argentina, 13th–19th November 1971 are listed. Estimates of seabird numbers are made and the stage in the breeding cycle determined: *Spheniscus magellanicus* c. 446,000 pairs (hatching), *Phalacrocorax magellanicus* c. 500 pairs (nest building, a few eggs), *P. bougainvillii* c. 60 pairs (very small chicks), *P. albiventer* c. 4,300 pairs (incubating), *Catharacta skua* c. 25 pairs (incubating), *Leucophaeus scoresbii* c. 25 pairs (laying), and *Larus dominicanus* c. 32,300 pairs (laying). *Sterna hirundinacea*, *S. maxima* and *S. eurygnatha* are known to nest (or to have nested) at Point Tombo, but we were probably too early to find them breeding ourselves. Nesting of *Phalacrocorax magellanicus* and *Leucophaeus scoresbii* represent extensions of recorded breeding range. Nesting of *Phalacrocorax albiventer* and *Oreopholus ruficollis* had been overlooked for a century.

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Francisco Erize kindly provided additional data on seabirds. An earlier draft of the paper was read by C. W. Benson, W. R. P. Bourne, William Conway, Rodolfo Escalante, E. R. Parrinder, O. S. Pettingill, C. C. Olrog and Bernard Stonehouse, and their comments are much appreciated. Miss Judy Billington undertook the typing.

References:

Carrara, I. S. 1952. *Lobos marinos, pinguinos y guaneros del littoral maritimo e islas adyacentes de la Republica Argentina*. La Plata: Universitat. (A translation into English by Donaldo MacIver of the chapter on penguins has been deposited at the Alexander Library of the Edward Grey Institute at Oxford.)

Conway, W. G. 1965. The penguin metropolis of Punta Tombo. *Animal Kingdom* August 1965: 115–123.

— 1971. Predation on Penguins at Punta Tombo. *Animal Kingdom* August 1971: 2–8.

Durnford, Henry. 1877. Notes on some birds observed in the Chubut Valley, Patagonia. *Ibis* (4)1: 27–46.

— 1878. Notes on the birds of central Patagonia. *Ibis* (4)2: 389–406.

Erize, Francisco. 1972. The Guanay Cormorant *Phalacrocorax bougainvillii* nesting on the Atlantic coast of South America. *Bull. Brit. Orn. Cl.* 92: 117–118.

Escalante, R. 1968. Notes on the Royal Tern in Uruguay. *Condor* 70: 243–247.

— 1970. *Aves Marinas del Rio de la Plata*. Montevideo: Barreiro and Ramos.

— 1971. El Gaviotin Real en la Argentina. *Neotropica* 17: 101–104.

Herrero, Rudolpho I. 1970. Private report to Casa y Conservacion de la Fauna, Paseo Colon 974, Buenos Aires. (Copy deposited at the Alexander Library of the Edward Grey Institute, Oxford).

Kearton, Cherry. 1930. *Island of Penguins*. London: Longmans.
Korschenewski, P. 1969a. El Pinguino Magellanico. *El Hornero* 11: 20–26. (Translation deposited as for Herrero above).
— 1969b. Observaciones sobre axes del litoral patagonico. *El Hornero* 11: 48–52.
McLachlan, G. R. & Liversidge, R. 1970. *Roberts Birds of South Africa*. Cape Town: John Voelcker Bird Book Fund.
Meyer de Schauensee, R. 1970. *A Guide to the Birds of South America*. Narberth, Penn.: Livingston.
Murphy, R. C. 1936. *Oceanic Birds of South America*. New York: American Museum of Natural History.
Olrog, C. C. 1959. *Las Aves Argentinas*. Tucuman: Instituto Miguel Lillo.
— 1968. *Las Aves Sudamericanus*. Tucuman: Instituto Miguel Lillo.
Pinkerton, John. 1812. *A General collection of . . . Voyages and Travels in all parts of the world*. London: Longmans.
Robbins, Chandler S., Brunn, Bertil & Zim, Herbert S. 1966. *Birds of North America*. New York: Golden Press.
Stonehouse, B. 1957. The general biology and thermal balances of penguins. *Advances in Ecological Research* 4: 131–196.
Zapata, A. R. P. 1965. Nuevas localidades de nidificacion. *Physis* 25: 383–385.

The South American Sea Lion *Otaria byronia* as a predator on penguins

by Jeffery Boswall

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A preliminary study of the likely literature (e.g. Cabrera & Yepes 1960; Sparks & Soper 1968; Stonehouse 1968; Scheffer 1958) fails to reveal any instances of the South American Seal Lion *Otaria byronia* preying upon penguins, Spheniscidae, except that Hamilton (1934) saw Rockhopper Penguins *Eudyptes crestatus* being pursued by parties of sea lions in the Falkland Islands and that Murphy (1936) quotes two early records of Rockhoppers being taken by sea lions, also in the Falklands, though the descriptions seemed to him to fit the Leopard Seal *Hydrurga lepontonyx* rather than the sea lion.

Stonehouse (1967) writes, "Fur seals *Arctocephalus* sp., sea lions of three species, and phocid seals of five genera, inhabit penguin waters and have nearly all at one time or another been *suspected* of predation" (my italics) on penguins, but "the only seal known to be a regular predator of penguins is the Leopard Seal *Hydrurga lepontonyx* . . .".

Conway (1971), who did see four Magellanic Penguins *Spheniscus magellanicus* being taken in this way at Point Tombo, Chubut, Argentina, wrote, "Leopard Seals often eat penguins in the Antarctic and there are records of predation by other kinds of pinnipeds as well. But it was not until I . . . began a check of the literature that I discovered that my observations may be a first for the Patagonian sea lion". R. J. Prytherch (Boswall & Prytherch 1972) saw a South American Sea Lion at the same locality in November 1971 eating a Magellanic Penguin that it must surely have caught itself.

In the light of this background it may be of value to bring together some recent observations of penguins as prey of the South American Sea Lion that suggest the habit may be more frequent and widespread than the literature indicates.

Maurice Rumboll (in discussion 1972), who with Dr. & Mrs. O. S. Pettingill spent the austral summer of 1971–72 in the Falkland Islands, saw a South American Sea Lion at Kidney Island leave the sea, come twelve feet up on to a rock, grab a Rockhopper and return to the sea with it. On New Island he saw three Gentoo Penguins *Pygoscelis papua* taken by the same species of mammal in one afternoon. In her book on an earlier visit to the same archipelago, Mrs. Pettingill (1962) wrote, "sea lions crossed back and forth offshore, watching us curiously and occasionally deflecting a stream of land-bound rockhoppers, but we never saw one try to snatch a penguin. We only saw the evidence—penguin skins on the shore". O. S. Pettingill (pers. comm. June 1972) writes, "A common sight on the beaches in the Falkland Islands are skins of Gentoo and Rockhopper Penguins turned inside out with heads, flippers, and feet still attached. They are no doubt the result of sea lions vigorously shaking the birds until they literally throw the skins off the birds' bodies. Another common sight is the tight rafting of the Gentoos and Rockhoppers as they swim or porpoise shoreward to their colonies. This occurs when sea lions are patrolling the waters and I am confident that it is a protective manoeuvre, there being greater 'safety in numbers'. When there were no sea lions evident, the penguins were less prone to form rafts and often moved shoreward in much smaller groups or even alone".

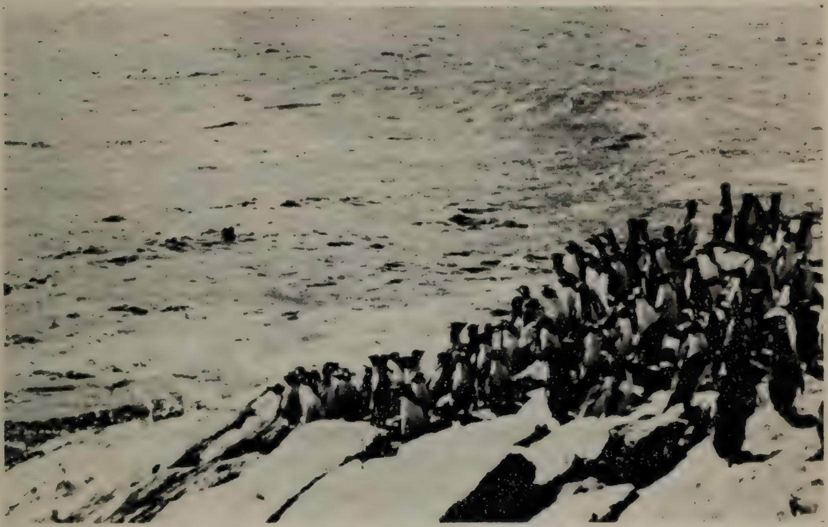
More recently, in early February 1972, on one of the most north-westerly of the Falklands, Steeple Jason, Ned Kelly (personal discussion 1972) saw on one day two Rockhoppers taken by a South American Sea Lion, and three days later a single bird similarly captured.

Ian Strange (pers. comm. May 1972), who has been resident in the Falklands for a number of years, writes, "I have seen penguins being taken by sea lions and have a number of recorded sightings. I have personally seen them taking Rockhopper, Gentoo and Magellan. How frequently? This is a tall order but I would go as far as saying that certain adult bull individuals probably hunt for penguins while the birds are available. I say individuals because I believe it is the odd rogue pushed out of a breeding harem which adopts this habit. I have yet to see a female or young seal ["seal" means sea lion in the Falklands] taking penguins and I have never seen more than one at a time doing this".

It was at the Falklands also that Morrell (1832) and Fanning (1924) as quoted by Murphy (1936: 424–5) each reported the capture of penguins by sea lions. I have not consulted the originals but Fanning's description of the behaviour of the sea lions, as quoted by Murphy, exactly fits the way "my" Staten Island animals behaved as I will now describe. In the light of what we now know I suggest that Morrell and Fanning were correct in their identification.

On 19th January 1972, Robin J. Prytherch and Donaldo MacIver saw three Rockhoppers at Franklin Bay, Staten Island, fall prey to two male South American Sea Lions within 25 minutes, and two days later I watched (and Douglas Fisher filmed) another male (or one of the same two?) hunting for about four hours, during which time it caught about twenty of these penguins. The animal waited in the water opposite a landing point on the coast in constant use by departing and returning penguins, raising its head above the water surface at intervals. With a very swift and sudden turn of speed it would grab a penguin (appearing seldom, if ever, to miss), surface, shake the bird from side to side, and often play "cat-and-mouse" with it by tossing it forward and pursuing it again. Both Giant Petrels *Macronectes giganteus* and Kelp Gulls *Larus dominicanus* attended the carcase, both while the sea lion was dealing with it and after it had been discarded by its capturer. Unfortunately I was not able to make proper notes at the time (my function was to spot for the photographer), nor did I recover any carcases, but I formed the impression that the mammal did not eat many of the penguins it killed. One of the few notes I did take at the time says "A most efficient but apparently wasteful hunter". Towards the end of the period of observation it was joined by a second male.

The film (Boswall 1972) shows the above behaviour and also that on one occasion the mammal came right out of the sea on to the rocks, grabbed a penguin and returned to the sea with it. R. J. Prytherch had seen a mammal do this two days earlier.



Rockhopper Penguins *Eudyptes crestatus* turning back from entering the sea because of the waiting South American Sea Lion *Otaria byronia* offshore. Franklin Bay, Staten Island, Tierra del Fuego, Argentina, 21st January 1972. By Jeffery Boswell.

Summary: Published and unpublished observations on Rockhopper, Gentoo and Magellanic Penguins as prey of the South American Sea Lion suggest that the relationship may be more frequent than was previously thought.

References:
Boswall, Jeffery. 1972. *Wildlife Safari to the Argentine No. 6: Tierra del Fuego.* One 16mm. 25-minute colour film. Bristol: BBC.
Boswall, Jeffery & Prytherch, R. J. 1972. Some observations on the birds of Point Tombo, Argentina. *Bull. Brit. Orn. Cl.* 92: 118–129.
Cabrera, A. & Yepes, J. 1960. *Mamiferos Sud Americanos.* Buenos Aires: Ediar.
Conway, William G. 1971. Predation on Penguins at Punta Tombo. *Animal Kingdom* August 1971: 2–8.
Fanning, E. 1924. *Voyages and discoveries in the South Seas 1792–1832.* Salem.
Hamilton, J. E. 1934. The southern sea lion *Otaria byronia* (de Blainville). *Discovery Repts.* 19: 121–164.
Morrell, Benjamin. 1832. *A narrative of four voyages to the South Sea etc. from the year 1822–1831.* New York.
Murphy, R. C. 1936. *Oceanic Birds of South America.* New York: American Museum of Natural History.

Pettingill, E. R. 1962. *Penguin Summer.* London: Cassell.
Scheffer, V. B. 1958. *Seals, Sea Lions and Walruses.* London: O.U.P.
Sparks, John & Soper, Tony. 1967. *Penguins.* Newton Abbot: David & Charles.
Stonehouse, B. 1967. The General Biology and Thermal Balance of Penguins. *Advances in Ecological Research* 4: 131–196.
— 1968. *Penguins.* London: Arthur Barker.

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Is the bulbul *Phyllastrephus placidus* a good species?

by R. J. Dowsett

Received 12th June 1972

INTRODUCTION

Recent authors (e.g. Hall & Moreau 1970; White 1962) have considered the bulbuls *Phyllastrephus placidus* (Shelley) and *P. cabanisi* (Sharpe) to be subspecies of *P. fischeri* (Reichenow). But Ripley & Heinrich (1966) have given convincing evidence that *fischeri* is best considered specifically distinct from *cabanisi* (race *placidus*) in coastal Tanzania and Kenya, and added support for this view is given by Benson *et al.* (1970) and Britton (1972). I consider that *placidus* too is best considered a species distinct from *cabanisi* on the evidence available, which is discussed below. This makes zoo-geographical sense, with *fischeri* a bird of lowland, coastal forest; *placidus* in montane forest; and *cabanisi* confined to mid-altitude plateau forests in central Africa.

COLOUR DISTINCTIONS

Diesselhorst (1960) and Moreau (1937) have both reviewed the races of *P. fischeri* in a realistic manner, but this work seems not to have been taken into account by recent authors. Diesselhorst concluded, from a study of museum specimens, that there are two groups within the species, a *fischeri* group and a *cabanisi* group (the latter including *placidus*), and that both were more distinct from each other than were the other races that he recognised. Moreau, with the added advantage of extensive field experience of the group, also considered that *cabanisi* is not particularly close to *fischeri*, and indeed gave it specific status (although retaining *placidus* as a race of *fischeri*). Equally important, Moreau stressed that *sucosus* is not closely related to *cabanisi*, notwithstanding some plumage similarities. Chapin (1953) too considered that *sucosus* is a race worth recognising. It is unfortunate that sight has been lost of these valuable reviews through the lumping of all forms with *fischeri* by White (1962).

The colour differences between *fischeri* and *placidus* have been well described by Benson *et al.* (1970) and Ripley & Heinrich (1966). *Placidus* is equally distinct from *cabanisi*, having the crown very strongly tinged brown (whereas that of *cabanisi* is dark olive) and being much darker olive green, less yellowish, on the mantle. The rectrices of *placidus* are dark chestnut, those of *cabanisi* very light chestnut. Below, *placidus* has a whitish-yellow throat (canary yellow in *cabanisi*), and its chest, flanks and vent are rather dark olive, lacking the bright yellow of *cabanisi*.

These colour differences alone might well be considered no more than racial characters, and Benson *et al.* (1970) have suggested that birds from northern Tanzania (Oldeani and Mbulu) show signs of being intermediate in colour between *placidus* and *cabanisi*. Diesselhorst (1960) commented on these same specimens (in the British Museum) and considered them best called *placidus*. I feel that it is most likely they are merely intergrades between nominate *placidus* and *sucosus* (which is probably a valid race of *placidus*). There is a great gap between Oldeani and the nearest known *cabanisi* in western Tanzania and I think it is unlikely there is any connection between the two populations, although this should certainly be investigated further in the field. There is a tendency towards yellowish underparts in *sucosus* (though as Moreau pointed out, never as yellow as in *cabanisi*) as one moves north. Thus where they come closest in range *cabanisi* and *placidus* are most dissimilar in colour.

SIZE DIFFERENCES

Tables 1 and 2 give measurements for different populations of *cabanisi* and *placidus*, although only in the case of the latter is there widespread isolation between populations.

Apart from my own measurements I have also included some taken for me in the collections of the British Museum (Nat. Hist.) and the National Museum of Rhodesia at Bulawayo by C. W. Benson and M. P. Stuart Irwin. I know that we all three use a strictly comparable maximum chord technique. I have also included *in toto* data from Verheyen (1953) although it is not clear which technique he used. Although Ripley & Heinrich (1966) give measurements I have not included these as it is clear from an examination of some of the Heinrich collection that theirs are not maximum chord measurements, and so not strictly comparable. Juveniles are excluded.

In Table 2 I have included birds from Loliondo in northern Tanzania with those from Kakamega in western Kenya (which tend towards *sucosus*), following Chapin (1953) and Moreau (1937), although the small sample examined from Loliondo do have proportionately longer tails. I have also shown Moreau's Oldeani and Mbulu birds separately. These certainly seem to have longer tails than *placidus* from neighbouring areas, but this is a factor which might vary a great deal from one isolated mountain to the next, and requires further investigation. Britton (1972) has shown that there may be considerable local differences in the weights of montane *placidus*.

P. cabanisi and *placidus* approach each other most closely in geographical distribution in north-eastern Zambia, and as the Tables show it is in this area that there is the greatest discrepancy in size, with no overlap in wing and tail lengths. This is shown also in the body weights given in Table 3. It has been suggested (see Britton 1972) that there is a cline of decreasing size in *cabanisi* as one moves north. The evidence in Table 1 is not conclusive, although the Zaire and Tanzania birds certainly seem to be shorter tailed than those in northern Zambia, while the wing and tail measurements of the Tanzania birds are decidedly smaller, with little overlap, compared with the small sample from Angola measured by Rand (1958). Neither tail: wing ratios nor culmen lengths in either species appear to differ to any appreciable degree, although there is a lot of local variation. Similarly Britton (1972) has shown that where *placidus* and *fischeri* come closest to each other in coastal Kenya they are most dissimilar in weight. Ripley & Heinrich (1966) have shown that *fischeri*, although a bird of lower altitude than *placidus*, is the larger of the two by a great degree where they are most nearly sympatric, and this now seems to be the case with *cabanisi* and *placidus* too. This is not what one would expect if they are conspecific, following Bergmann's Rule.

TABLE 1

Measurements of *Phyllastrephus cabanisi* (mm)

	♂♂			♀♀		
	range	*mean*	n	range	*mean*	n
North-western Zambia						
Wing	90–96	*92·4*	9	84–88	*85·5*	6
Tail	87–98	*92·4*	10	80–91	*85·5*	6
Tail/Wing %	96–103	*99·7*	9	95–103	*99·8*	6
Culmen (1)	19·0–22·5	*20·3*	10	18·0–20·0	*18·9*	6
Southern Zaire (*Upemba*) (2)						
Wing	90–98	*93·9*	25	78–87	*84·2*	18
Tail	81–94	*88·3*	24	79–85	*81·9*	16
Tail/Wing %	84–98	*94·2*	24	93–101	*96·9*	16
Culmen	—	—	—	—	—	—
North-eastern Zambia						
Wing	91–94	*92·3*	8	85–87	*86·0*	3
Tail	91–101	*93·4*	9	88–92	*89·5*	4
Tail/Wing %	97–110	*101·6*	8	101–104	*103·0*	3
Culmen	18·0–21·0	*20·0*	9	18·0–19·5	*18·9*	4
Western Tanzania						
Wing	84–92	*87·9*	7	85	—	1
Tail	83–88	*85·7*	7	77–78	*77·5*	2
Tail/Wing %	93–100	*97·7*	7	90·6	—	1
Culmen	18·5–21·5	*20·1*	7	19	—	1

(1) Culmen measured from skull in all cases.
(2) Original data from Verheyen (1953).

TABLE 2

Measurements of *Phyllastrephus placidus* (mm)

	♂♂			♀♀		
	range	*mean*	n	range	*mean*	n
North-eastern Zambia & northern Malawi						
Wing	80–86	*83·3*	4	76–81	*78·2*	6
Tail	81–86	*83·2*	5	72–80	*75·8*	6
Tail/Wing %	96–104	*100·5*	4	93–103	*97·2*	6
Culmen (1)	19·0–21·0	*20·2*	5	18·5–19·0	*18·8*	6
South-western Tanzania						
Wing	78–85	*82·6*	8	74–80	*77·0*	10
Tail	78–85	*82·3*	9	72–79	*75·8*	9
Tail/Wing %	96–101	*99·6*	8	97–100	*98·3*	9
Culmen	18·0–21·5	*19·4*	8	17·0–19·0	*18·4*	10
North-eastern Tanzania						
Wing	86–89	*87·0*	8	75–82	*79·0*	11
Tail	79–85	*81·1*	8	71–84	*76·4*	10
Tail/Wing %	91–98	*93·3*	8	92–102	*96·1*	10
Culmen	18·0–21·0	*19·7*	8	18·0–20·0	*18·7*	11
Northern Tanzania (*Oldeani, Mbulu*)						
Wing	85–92	*88·5*	4	82–85	*83·3*	3
Tail	84–88	*86·3*	4	78–82	*80·0*	2
Tail/Wing %	96–102	*97·8*	4	95–96	*95·5*	2
Culmen	20·5–21·0	*20·8*	4	18·5–19·0	*18·8*	3
Northern Tanzania (*Loliondo*) *& western Kenya* (*Kakamega*)						
Wing	81–87	*84·4*	5	77–80	*78·8*	5
Tail	76–86	*79·0*	5	76–79	*78·0*	3
Tail/Wing %	90–102	*93·6*	5	95–103	*99·7*	3
Culmen	16·5–19·0	*18·1*	5	17·0–19·0	*18·4*	4

1) Culmen measured from skull in all cases.

TABLE 3

Body weights (g) of *Phyllastrephus cabanisi* and *P. placidus*

P. cabanisi

	♂♂			♀♀		
	range	*mean*	n	range	*mean*	n
North-western Zambia (1)	33·0–38·3	*35·9*	5	27·8–30·5	*29·4*	3
Southern Zaire (2)	35–42	*38·0*	24	27–39	*33·0*	11
North-eastern Zambia	33·0–35·5	*33·8*	5	28·0–34·5	*30·6*	4

P. placidus

	♂♂			♀♀		
	range	*mean*	n	range	*mean*	n
North-eastern Zambia & Northern Malawi (3)	25·7–31·2	*27·8*	5	22·0–26·8	*24·1*	5
South-western Tanzania (4)	24–30	*27·4*	8	20–25·9	*22·8*	11
North-eastern Tanzania (1)	21–32	*28·7*	20	19–31	*24·3*	24
Western Kenya (Kakamega) (1)	22–31	*26·5*	25	19–26	*23·0*	26

(1) Data from Britton (1972)
(2) Data from Verheyen (1953).
(3) Data from Jackson (1971)
(4) Data from Ripley & Heinrich (1966) and Dowsett (pers. obs.).

STRUCTURAL DIFFERENCES

Cabanisi usually has a heavier bill than *placidus* with a slightly more curved culmen. In *fischeri* the culmen is almost straight from base to tip. However, as all three species feed in a similar way in the ground and mid-strata of forest, there are perhaps unlikely to be any major differences in the food taken by each.

In material from Zambia and Tanzania examined in the National Museum of Zambia at Livingstone and in the Bulawayo Museum there appear to be differences in the wing formulae of *cabanisi* and *placidus*. In the former the longest primary is the 5th (ascendent numbering) whilst in *placidus* it is the 6th. The extent to which this varies geographically requires examination of a larger number of specimens.

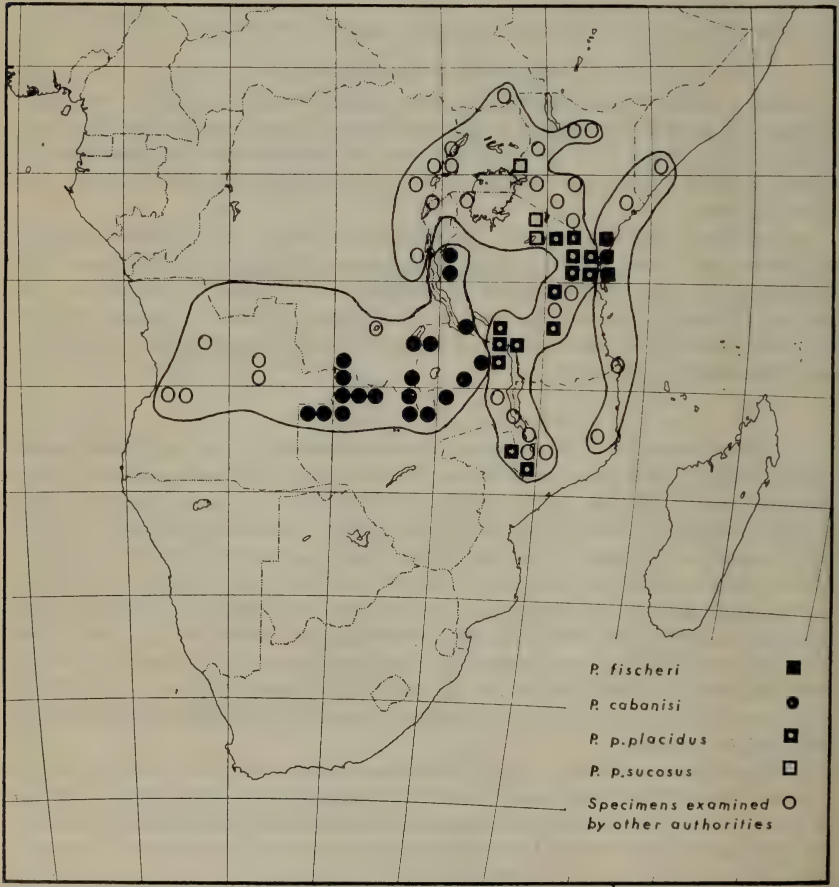
ECOLOGICAL DIFFERENCES

P. placidus is a bird of montane forests, feeding as do all three species mainly in the thick ground-stratum. In northern Tanzania it occurs above about 1,000 m (Ripley & Heinrich 1966) and in southern Malawi above about 1,200 m (Benson 1953). In north-eastern Zambia and adjacent Malawi and Tanzania it probably does not occur below 1,800 m (Dowsett in prep.). These differing altitudes are the result of local variation in the lower limits of sub-montane and montane mist forest. In north-eastern Tanzania *fischeri* is a bird of lowland, often coastal, forest below about 600 m, and it and *placidus* are altitudinally allopatric in that area. In north-western and north-eastern Zambia *cabanisi* occurs in mid-altitude plateau forests between about 1,000 and 1,500 m, and is not known to occur in the montane forests inhabited by *placidus*.

All three species appear roughly similar in behaviour, but then this is true of many of the Pycnonotidae. Dowsett & Stjernstedt (in press) found *placidus* as far west as the Mafinga Mountains in north-eastern Zambia (the first records for that country). The nearest *cabanisi* are only some 150 km to the west, at Mbesuma on the Chambeshi River (Benson *et al.* 1971). In this part of north-eastern Zambia Stjernstedt and I have found slight, but apparently consistent, differences in the voices of *placidus* and *cabanisi*. We have not heard *placidus* sing, and the experience of other observers has been that it rarely does so. Its call, in the field and in the hand (when mistnetted), is normally a distinctive chatter, which reminded us both of the European Mistle Thrush *Turdus viscivorus*. *Cabanisi* is a much noisier bird. Its song is often heard, and is a long, rather monotonous, repititious stream of two notes, rather thrush-like in timbre, with a second bird joining in with a chatter. In the hand it makes an undistinguished squawk, and in the field has a typical bulbul-like three note call, often preceded by a chatter. Only rarely have we heard it make the Mistle Thrush chatter of *placidus*. Stjernstedt has tape recordings of the calls of both species and the song of *cabanisi*, which he has kindly discussed with me.

CONCLUSIONS

In north-eastern Zambia, where *P. cabanisi* and *placidus* most closely approach each other geographically, there are considerable differences in colour and size, though not of bill length nor tail: wing ratio. There are apparently consistent differences in bill shape and wing formulae, and also in



Map showing specimens of *Phyllastrephus* examined and probable distribution of each species.

voice. *Placidus* is a widespread bird of montane forest in eastern Africa, whereas *cabanisi* is confined to the mid-altitude plateau forests of northern Zambia, Angola, southern Zaire and western Tanzania. All these differences together seem scarcely to be racial, and I think the most satisfactory course is to give both specific status.

It may well be, as with some other African birds, that these two species (and *fischeri*) are in fact quite closely related, and that it is only when they are nearly sympatric that differences in size and habitat become emphasized. Clearly further investigation is needed in the field in northern and western Tanzania. From my own experience in the field of *cabanisi* and *placidus* I am not convinced that they are closely related. For the moment, however, they are perhaps best included in a superspecies with *fischeri*. Hall & Moreau (1970) suggested that *P. scandens* might also be closely related to this group, but Mrs. B. P. Hall (*in litt.*) tells me that A. D. Forbes-Watson thinks this is not so.

The map shows the distribution of specimens of the three species, *P. fischeri*, *cabanisi* and *placidus*, those examined by Benson, Irwin or myself and those in the literature. In summary the distribution of the recognised forms is:

Phyllastrephus fischeri: Coastal lowland forest from Hanole in southern Somalia, south through Kenya and Tanzania to Netia in northern Mocambique.

Phyllastrephus placidus: Montane forest. The nominate race, from Cholo in southern Malawi and Namuli Mt. in adjacent Mocambique, northwards through Malawi, northern Mocambique, north-eastern Zambia, southern and eastern Tanzania, north-west to Kilimanjaro and Mt. Meru. Replaced by *sucosus*, or intergrades between the two races, from Oldeani and Mbulu in northern Tanzania, north to Marsabit in northern Kenya and the Didinga Mts. in southern Sudan, and down the Rift Valley, through western Uganda and eastern Zaire, south to Baraka.

Phyllastrephus cabanisi: Non-montane plateau forests, from northern and western Angola eastwards through southern Zaire and northern Zambia to Mbesuma on the Chambeshi River, and north to Kasulu in western Tanzania.

ACKNOWLEDGEMENTS

I am most grateful to Messrs. C. W. Benson and M. P. Stuart Irwin for examining material on my behalf in the British Museum (Natural History) and the National Museum of Rhodesia at Bulawayo. Both discussed the problem in detail with me during a visit to Bulawayo. Mrs. B. P. Hall kindly commented on an early draft of this paper, and Mr. P. L. Britton generously allowed me to see the MS of his paper on bulbul weights, since published. Mr. R. Stjernstedt helped investigate this problem in the field in Zambia and Tanzania, and Mr. A. Muchindu of the National Museums of Zambia produced first class study skins of the specimens I collected.

References:

Benson, C. W. 1953. *Check list of the birds of Nyasaland.* Blantyre & Lusaka: Joint Publications Bureau.

Benson, C. W., Brooke, R. K., Dowsett, R. J., & Irwin, M. P. S. 1970. Notes on the birds of Zambia. Part V. *Arnoldia* (*Rhodesia*) 4(40).

— 1971. *The Birds of Zambia.* London: Collins.

Britton, P. L. 1972. Weights of African Bulbuls (Pycnonotidae). *Ostrich* 43(1): 23–42.

Chapin, J. P. 1953. Birds of the Belgian Congo. Part 3. *Bull. Amer. Mus. Nat. Hist.* 75A.

Diesselhorst, G. 1960. Zur geographischen Variabilität von Phyllastrephus fischeri (Reichenow). *Veroff. Zool. Staatssamml. Munchen.* 6: 81–100.

Dowsett, R. J. in prep. Avian zoogeography in the Tanganyika-Nyasa montane group.
Dowsett, R. J. & Stjernstedt, R. in press. The birds of the Mafinga Mountains. *Puku* 7.
Hall, B. P. & Moreau, R. E. 1970. *An Atlas of speciation in African passerine birds*. London: British Museum (Natural History).
Jackson, H. D. 1971. Ornithological results of the 1970 National Museums of Rhodesia expedition to Malawi. *Arnoldia* (*Rhodesia*) 5 (12).
Moreau, R. E. 1937. A note on *Phyllastrephus fischeri* Reichw. and related forms. *Bull. Brit. Orn. Cl.* 57: 125–128.
Rand, A. L. 1958. Notes on African bulbuls. *Fieldiana: Zool.* 35(6): 145–220.
Ripley, S. D. & Heinrich, G. H. 1966. Comments on the avifauna of Tanzania: I. *Postilla* 96.
Verheyen, R. 1953. *Exploration du Parc National de l'Upemba: Oiseaux*. Fasc. 19. Inst. Parcs Nat. Congo Belge, Bruxelles.
White, C. M. N. 1962. *A revised check list of African shrikes, orioles, etc*. Lusaka: Government Printer.

[The cost of reproduction of the map in the above paper is to be borne by the author—Ed.]

Description of a new green bulbul from the Republic of Zaire

by A. Progogine

Received 31st July 1972

Andropadus virens Cassin figures prominently among green bulbuls as the most common in African forests. It is a bird of secondary growth and thickets on the edges of clearings (Chapin 1953). Several subspecies, differing from the nominate form in size and intensity of coloration, have been described from different parts of Africa, especially from East Africa (White 1962).

In the eastern part of the Republic of Zaire, the green bulbul *A. v. virens* is an extremely common bird, especially in secondary forest, and my hunters have procured for me a long series of it (Prigogine 1971), the series being very homogenous, scarcely varying from one region to another. This is why my attention was immediately drawn to a specimen resembling *A. virens*, but easily distinguishable from these others by a blackish beak, a tarsus and feet equally blackish and a generally more dark colour of plumage.

Mrs. B. P. Hall was kind enough to examine this specimen and confirmed my observations, and also drew my attention to other peculiarities which had escaped me. As the new form is sympatric with *A. virens*, it is a question of a distinct species. Mrs. Hall (*in litt.*) is also of the opinion that this bird probably represents a new species, which I propose to call:—

Andropadus hallae, sp. nov.

Type: ♂ adult, collected 16th September 1970 at Nyamupe (3° 21′ S., 28° 08′ E.), altitude 990 m. In Musée royal de l'Afrique Centrale, Tervuren, registered number 124.702 (my collector's number 15.009).

Description: Resembles *A. v. virens*, but the general appearance of *hallae* is markedly darker; in particular, crown and back dark olive-green with the upper tail-coverts a little lighter, rectrices olive-green washed with dark brown, chin and throat dark green without any yellowish wash, remainder of underside dark green slightly yellowish in the middle of the abdomen, under tail-coverts greenish olive with lighter tips, remiges olive-green washed with dark brown, interior of remiges dark grey becoming paler towards the margins, axillaries pale green, upper and lower mandibles almost black, tarsus and feet black with claws blackish.

Dimensions: Wing 75 mm, tail 68 mm, culmen from skull 15 mm, tarsus 18 mm.

For comparison, the following are some measurements of *virens* from eastern Zaire:—

Locality		*Wing*	*Tail*
Vicinity of Kamituga	10♂♂	73 – 78 (75·1)	65 – 72 (67·9)
	10♀♀	69 – 74 (71·2)	63 – 69 (65·7)
Vicinity of Maboya	6♂♂	76 – 78 (76·7)	70 – 73 (71·2)
	4♀♀	70 – 73 (71·8)	66 – 69 (67·8)

It can thus be stated that there is no difference in size between *hallae* and *virens.*

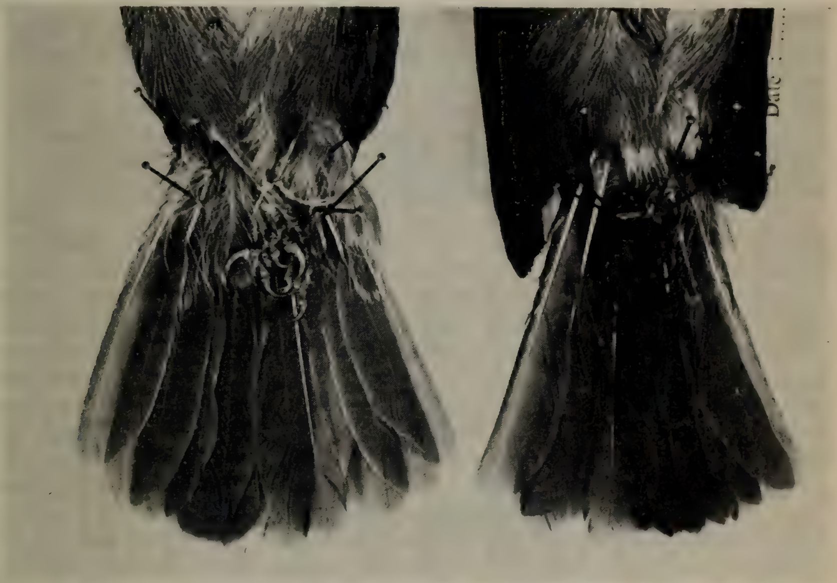


Plate. Tail and anterior of underside of (left) *Andropadus virens*, (right) *A. hallae.*

On the other hand, *hallae* differs from *virens* in having a tail clearly less graduated (see Plate), and it should be emphasised that there is no question of the tail of the specimen being in moult. Thus the difference (D) between the longest rectrices and the external ones is merely 3·5 mm in *hallae*, whereas I have found that for various specimens of *virens* from the same region the value of D is appreciably greater: 8·3 mm for the average of males and 7·4 mm for the average of females (see Table).

The specimen of *hallae* was obtained in primary forest by my hunter Kalinde Musiko, who insisted on the fact that the place of collection did not correspond with the normal habitat of *virens*, which is nevertheless very widespread in this region as a whole. Thus it seems that *hallae* must be a bird of primary forest. The altitude of collection being 990 m, I assume that it is a form associated with transitional (i.e. between montane and lowland) forest, and very probably only in a narrow altitudinal belt.

It may also be noted that the gonads of the type of *hallae* were slightly enlarged (5 × 3 and 3 × 2 mm), indicating without doubt the proximity of the breeding season (perhaps starting in October).

TABLE

Species	*Form of beak*	*Colour of beak*	*Colour of feet*	*Colour of claws*	*D (1) (2) tail (mm)*	*Tail (T) (1) (mm)*	*D/T %*
hallae	large	brownish black	black	blackish	♂ 3·5	68	5·1
virens	large	light brown	brownish	brownish	♂ 8·3 (5·5–10·5) ♀ 7·4 (5–10)	67·9 (65–79) (10♂) 65·7 (63–69) (10♀)	12·1 11·1
latirostris	large	brownish	brownish yellow	brownish yellow	♂ 9·2 (8–13) ♀ 8·6 (7–10)	76·2 (71–81) (5♂) 72·4 (69–77) (5♀)	12·1 11·9
curvirostris	fine, pointed	blackish brown	blackish	dark brown	♂ 9·2 (8–10) ♀ 9·0 (8–10)	73·2 (69–77) (13♂) 70·0 (68–73) (9♀)	12·6 12·8
gracilis	fine, pointed	blackish brown	blackish	dark brown	♂ 4·8 (4–6) ♀ 3·8 (3–5)	63·0 (60–66·5) (17♂) 60·6 (57–63) (9♀)	7·6 6·3
ansorgei	fine, pointed	blackish brown	blackish	dark brown	♂ 3·8 (3–5) ♀ 3·8 (3–5)	64·4 (60–69) (10♂) 62·2 (60·5–65) (6♀)	5·9 6·1
gracilirostris	fine, pointed	blackish	blackish	blackish	♂ 8·6 (6–11) ♀ 7·0 (6–9)	75·0 (74–77) (5♂) 75·0 (73–77) (5♀)	11·5 9·3
montanus	fine, pointed	blackish brown	blackish brown	light brown	♂ 10·4 (8–14) ♀ 9·0 (7–13)	80·2 (77–84) (5♂) 75·4 (72–77) (5♀)	12·9 11·9
tephrolaemus	fine, pointed	blackish brown	brownish	brownish	♂ 9·6 (8–11) ♀ 7·8 (7–9)	88·2 (86–91) (5♂) 86·4 (84–88) (5♀)	10·9 9·0

(1) These measurements refer to specimens from the same region.
(2) Average of 20 measurements for *virens*, average of 5 for the other species.

The description of this bulbul has been a considerable preoccupation to me, above all because it is based on a single specimen, and an examination of all the specimens (about 1,000) of *virens* in the collection at Tervuren, emanating from all parts of Zaire, has not resulted in the discovery of another such specimen. Nevertheless as the provenance of the type of *hallae* will probably remain inaccessible for a long time, I have decided to publish this description in order to draw attention to the special characters of the specimen collected.

The new species is without doubt an *Andropadus*, as is shown by the beak, which has several notches on the edges of the upper mandible, and by other morphological characters. In general, *hallae* resembles *virens*, and it is necessary to consider these two sympatric (although with an ecological separation) species as siblings.

Nevertheless this resemblance could be only superficial, for *hallae* differs from *virens* by the different form of the tail. I have shown in the Table all the species of *Andropadus* which occur in the vicinity of Kamituga and in the highlands of Itombwe. Based on the form of the beak, we have a group *hallae*, *latirostris* and *virens*, with a large beak, and a group *ansorgei*, *curvirostris*, *gracilirostris*, *gracilis*, *montanus* and *tephrolaemus*, with a fine and pointed beak.

On the other hand, it seems possible to classify these *Andropadus* bulbuls equally well as a function of the value of D, the difference between the longest (central) rectrices and the shortest (external) ones. Thus most of the species have a graduated tail with the value of D in the order of 10%. Expressing D in percentages (average for the two sexes) we have:—*virens* 11·6, *latirostris* 12·0, *curvirostris* 12·7, *gracilirostris* 10·4, *montanus* 12·4, *tephrolaemus* 10·0. By contrast, in the three other species, the corresponding figures are appreciably less, varying only from 5 to 7%:—*hallae* 5·1, *gracilis* 7·0, *ansorgei* 6·0. Indisputably *hallae* belongs to the group comprising *gracilis* and *ansorgei*, of relatively small size and with a fine beak.

Two hypotheses have also been considered in regard to *hallae*:—

(1) It is an aberrantly coloured specimen of *virens*, the plumage containing an abnormal amount of melanin. This is not in keeping with the form of the tail, which is different from that of *virens*.

(2) It is a hybrid between *virens* and some other species of *Andropadus*. As *hallae* has a small value for D, in contrast to *virens*, all the species characterised by a strongly graduated tail can be excluded. Thus there remain only *ansorgei* and *gracilis*. But these two species are markedly smaller than *hallae* and *virens*, and I do not see how a hybridisation with *virens* could result in a bird having the characters of *hallae*. Thus this hypothesis must also be discarded.

Andropadus hallae is named in honour of Mrs. B. P. Hall, in recognition of her great contribution to the taxonomy and zoogeography of African birds.

To conclude, I wish to express my gratitude to Mr. C. W. Benson, who has not only advised me in the preparation of this paper, but has also very kindly translated it.

References:

Chapin, J. P. 1953. The birds of the Belgian Congo III. *Bull. Amer. Mus. Nat. Hist.* 75A.

Prigogine, A. 1971. Les oiseaux de l'Itombwe et de son hinterland. *Ann. Mus. Afr. Centr.* 8°, Sc. zool. 185.

White, C. M. N. 1962. *A revised check list of African shrikes, orioles, etc.*, Lusaka: Government Printer.

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Breeding of *Gypohierax angolensis* in western Angola in 1972

by R. K. Brooke & R. D. Jeffery

Received 24th August 1972

R. D. J. revisited from 30th June to 5th July 1972 that part of the Central Cubal River in Angola where he had studied the breeding of Palm-nut Vultures *Gypohierax angolensis* in previous seasons (Brooke & Jeffery 1972). The summer rains of 1971/72 had been very poor and the Central Cubal River had very nearly ceased to flow, a situation that had not been recorded in the previous fifteen years. Palm-nut Vultures were present in their usual numbers. Two occupied nests were found, each containing one egg. One of these nests had been used in 1971 and the other had been built for the 1972 breeding season. Four other 1971 nests still remained but were dilapidated and no attempt had been made to repair them. The remaining 1971 nests had disappeared. Except for the one already mentioned, no new nests had been built or were under construction.

The very low level of breeding activity in 1972 compared with 1970 and 1971 (Brooke & Jeffery 1972) is apparently the result of the preceding summer drought which had brought the flow of the river to a near standstill, since the numbers of Palm-nut Vultures and fruiting Oil Palms *Elaeis guineensis* were no less than before. It may well be that a reasonable supply of fresh water animal food may be necessary to bring Palm-nut Vultures into breeding condition as is the case with the African Marabou *Leptoptilos crumeniferus* (Ciconiidae) which is also both predator and scavenger (Kahl 1966). Thomson & Moreau (1957) showed that Oil Palm nut husks were not necessary to maintain the well-being and breeding capacity of Palm-nut Vultures but were merely the preferred item of diet.

It will be noted that Brooke & Jeffery (1972) thought that *G. angolensis* was more of a fish eagle than a vulture judging by its behaviour and general deportment. In this paper we have called it the Palm-nut Vulture as do most modern writers. This is because Professor Charles Sibley (*in litt.* to R. D. J.) finds that analysis of their egg white proteins suggests a closer relationship to vultures than to fish eagles of the genus *Haliaeetus*.

References:

Brooke, R. K. & Jeffery, R. D. 1972. Observations on the biology of *Gypohierax angolensis* in western Angola. *Bull. Brit. Orn. Cl.* 92: 15–21.

Kahl, M. P. 1966. A contribution to the ecology and reproductive biology of the Marabou Stork (*Leptoptilos crumeniferus*) in east Africa. *Journ. Zool. London* 148: 289–311.

Thomson, A. L. & Moreau, R. E. 1957. Feeding of the Palm-nut Vulture *Gypohierax*. *Ibis* 99: 608–613.

Taxonomy of *Schizoeaca fuliginosa* (Furnariidae), with description of two new subspecies

by C. Vaurie, J. S. Weske & J. W. Terborgh

Received 30th May 1972

Schizoeaca fuliginosa is an Andean Furnariid distributed from western Venezuela to Bolivia and most of its populations are very poorly known. It inhabits wet areas on the paramos, or an intermediate zone above timber line or above true mountain forest, at altitudes varying, roughly, from about 3,000 metres, or somewhat less, to about 4,000. The range is more or less widely interrupted by ecologically unsuitable gaps and, before the revision of Vaurie (1971), the six forms that were known were all treated as separate species. However, Vaurie stated that he believed that all the six forms were most probably conspecific because they differ morphologically from one another only in a matter of degree and are all geographically representative.

Vaurie returned to this question in preparing a monographic study of the Furnariidae, using material collected by Weske and Terborgh in 1967–1970 in Peru, in the departments of Ayacucho and Cuzco in mountain ranges east and west of the Apurimac Valley. In 1970, Weske and Terborgh were joined by J. P. O'Neill in Ayacucho, who also collected some specimens incorporated in this study and that are now in the collection of Louisiana State University, Baton Rouge, Louisiana. The other specimens from Ayacucho, and all those from Cuzco, are now deposited in the collection of the American Museum of Natural History, New York.

It is quite evident that the material from Cuzco represents a new form which differs from the other six forms named to date to about the same degree as they differ from one another. The birds from Ayacucho are less sharply differentiated than those from Cuzco, but are, nevertheless, of considerable taxonomic interest as they seem to form a link (though they are not truly intermediate) between the birds taken in Cuzco and the population of *S. fuliginosa* isolated on the plateau of Junin which was named *palpebralis* by Cabanis in 1873.

We have discussed the situation together and describe the two new birds as follows:—

Schizoeaca fuliginosa vilcabambae new subspecies

Type: American Museum of Natural History, no. 803123, adult male, collected by Weske and Terborgh, on 22nd July, 1968, at latitude 12° 36′ S by longitude 73° 30′ W, in the Cordillera de Vilcabamba, Cuzco, Peru, at an elevation of 3,190 metres.

Diagnosis: It is difficult to diagnose *vilcabambae* briefly because it differs from the other six subspecies named before this date only by a combination of characters (see below), but its throat is quite distinctly more ochraceous buff, less grayish, than in any other subspecies, the ochraceous area extending to the sides of the lower neck and upper breast.

This new subspecies is based on a series of 12 specimens, all collected by Weske and Terborgh, on 22nd–27th July, 9th August, 1967, and 16th–26th July, 1968. The sex of one was undetermined, the others measure: six males, wing 64 – 67 (65·33) mm, tail 95 – 106 (102), bill (from skull) 16·5 – 18 (17·25); five females, wing 62 – 64 (62·90), tail 95 – 104 (99·60), bill 16·5 – 17·5 (16·70). The type measures, respectively, 64, 105, 17. This new subspecies is known so far only from its type locality and is probably restricted to the northern end of the Cordillera of Vilcabamba.

Schizoeaca fuliginosa ayacuchensis new subspecies

Type: American Museum of Natural History, no. 803124, adult male, collected by Weske and Terborgh, on 26th August, 1968, at Puncu, 30 km north-east of Tambo, latitude 12° 47′ S by 73° 49′ W, Ayacucho, Peru, at an elevation of 3,370 metres.

Diagnosis: More nearly allied to *vilcabambae* than to any other subspecies, but gular patch far more conspicuous, and very strongly rufous, bright reddish chestnut rather than rufous cinnamon; pale area below the gular patch much less defined than in *vilcabambae*, and more grayish, rather than ochraceous buff; pattern of under parts below the upper breast varies somewhat individually, but is much less distinctly squamated as a rule. The rufous gular patch of *ayacuchensis* is considerably darker rufous, more rich, than in any other subspecies of *S. fuliginosa* with a rufous gular patch.

This new subspecies is based on a series of nine specimens collected at Puncu, with one exception, a locality near Uchuy Monte which is only 5 km removed from Puncu. They were taken on 24th–26th August, 1968, by Weske & Terborgh, and on 25th–28th July, 1970, by the same collectors and also O'Neill. They measure: five males, wing 60 – 66 (62·60), tail 100 – 115 (109·0), bill 17·5 – 18·5 (18·30); four females, wing 59 – 63 (60·75), tail 91 – 103 (98·0), bill 16·5 – 18 (17·5). The type measures, respectively, 63, 115, 18·5. This new subspecies is known so far only from the region northeast of Tambo, Ayacucho.

It has been stated that the six subspecies of *S. fuliginosa* known before this date (and now increased to eight) differ from one another in combinations of morphological characters. These characters vary only in degree, and it is impossible to discuss all the permutations in a paper of the present scope, nor germane, as we are not discussing the geographical variation of the species as a whole. The more salient differences are in general size, general coloration of the upper parts, presence or absence of an eye-ring, development and coloration of the superciliary streak, coloration of the chin and gular patch, and pattern of the under parts.

The two isolated populations which approach *vilcabambae* and *ayacuchensis* most closely in distribution are *palpebralis* of Junin, and *helleri* Chapman 1923, which is distributed from the southern end of the Cordillera of Vilcabamba, south to the cordilleras of Vilcanota and Carabaya. No appreciable differences in size exist between the four subspecies; *palpebralis* and *helleri* are rufous brown above, whereas *vilcabambae* and *ayacuchensis* are olive-brown, *ayacuchensis* being somewhat duller and paler than *vilcabambae;* they lack the eye-ring of *palpebralis* and *helleri*, although a few tiny white feathers do exist, irregularly, around the eyelid of three of the nine specimens of *ayacuchensis*. All four subspecies have a very indistinct superciliary streak, which is obsolete, and is rufous in *palpebralis*, and grayish in the other three, when evident at all. All four are rufous on the chin and upper throat, but this gular patch is much better developed in *ayacuchensis* than in any other subspecies; the under parts are very distinctly squamated below the upper breast in *vilcabambae*, much more so than in any other subspecies; these squamations exist in *ayacuchensis* and *palpebralis* but are less distinct, and seem to be lacking altogether in *helleri*.

We are grateful to Dr. J. P. O'Neill, and Louisiana State University, for the loan of three specimens of *ayacuchensis*.

Reference:

Vaurie, C. 1971. *Classification of the ovenbirds (Furnariidae)*. London: H. F. & G. Witherby.

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Bulletin of the

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Edited by
C. W. BENSON

Volume 92 No. 6 December 1972

Announcement

Starting in 1973, the Bulletin will be issued in four numbers per year instead of six. The total pages per volume will remain approximately the same, so that each number will be larger. These will be issued quarterly, and Volume 93, No. 1 will appear on 20th March, 1973.

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Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 92 No. 6 Published: 20th December, 1972

The six hundred and seventy-ninth meeting of the Club was held at the Café Royal, 68 Regent Street, London W.1., on Tuesday, 21 November, 1972 at 7 p.m.

Chairman: Sir Hugh Elliott, Bt., O.B.E.; present: 22 members and 22 guests.

The speaker was Dr. P. J. K. Burton who addressed the Club on the ornithological work of the British Trans-Americas Expedition, 1971-72 in Darien, and illustrated his talk with coloured slides.

The nest and eggs of the Purple-throated Cuckoo Shrike *Campephaga quiscalina*

by S. G. Madge

Received 12th June 1972

BRITISH MUSEUM
27 DEC 1972

Mackworth-Praed & Grant (1963) state that the nest and eggs of *Campephaga quiscalina* are undescribed, and the Rev. Dr. W. Serle (pers. comm. to Editor June 1972), with long experience of West Africa, also knew of no such description. However, Brosset (1972) has recently described both from Gabon. Nonetheless, there is good justification for publishing a further description, from the border of Zaire with Zambia. The two egg-laying dates in Benson *et al.* (1971) are only interpretations from collected specimens (original references Benson & White, 1957, *Check list birds N. Rhodesia*; Benson & Irwin, 1965, *Arnoldia, Rhodesia* 1 [28]). *Campephaga quiscalina* may well be a rather uncommon bird in much of its range, its scarcity adding to the difficulty of observing it, for although the male could easily be passed over as one of several species, the female is quite distinctive and easily recognisable (incidentally, plate IV in Benson *et al.*, 1971, shows the underside as orange in tone rather than a pure bright yellow, presumably a miscolouring perpetrated in reproduction from the original painting).

From the details in the paragraph following the present one it might appear at first sight that the habitat in which the nest was found is "wrong" for *C. quiscalina*, and what might be expected only for the related *C. phoenicea*. Benson *et al.* (1971) give the habitat of *C. quiscalina* as moist evergreen forest (i.e. riparian forest), of which there is none of any quantity within several miles of the nest. But they do also give Mavunda forest (found away from drainage lines, mostly in the North-Western Province of Zambia) as a habitat. At the site of the nest there is a certain amount of evergreen growth in thickets on termite mounds, enough to provide cover for such a typically forest species as a bulbul *Phyllastrephus cerviniventris*, and which must also suffice to meet the requirements of *C. quiscalina*. The latter also lives away from rivers and streams in evergreen growth in Forestry Department experimental plots just outside Ndola, which have been protected from burning since 1933. On these plots I have also found the warblers *Phylloscopus laurae* and *Apalis cinerea*, and other species usually associated with moist evergreen forest. Thus *C. quiscalina* can exist in what Benson *et al.* (1971: 26), following Fanshawe, refer to as Marquesia forest, a habitat which they discuss in conjunction with Mavunda forest.

On the morning of 23rd October 1971, near the border between Zambia and Zaire about 10 km north of Ndola, Zambia, my attention was attracted by a soft "whit . . . whit . . . whit" call which may have been made by a male *C. quiscalina* seen shortly afterwards, together with a female in a nearby tree. This was about 100 m on the Zaire side of the border at 12° 53′ S., 28° 35′ E. The habitat there is in general fairly open, many trees having been felled for charcoal burning. A fair number of trees of several species remain standing, interspersed with patches of cultivation, scrubby bushes and (it must be emphasised) giant termite mounds, some of which support evergreen growth —trees covered with entanglements of creepers. The female was foraging among the foliage, and it was soon apparent that she was collecting nest material. When she flew to a nearby tree I followed and watched her adding the material to a few scraps already placed on a thin horizontal branch near the top of the canopy and about 16 m above the ground. The bird ignored my presence below the tree and I watched her waving her head to and fro as if binding the materials on the tree with something invisible, later found to be spider web. On 28th October both the male and the female were present near the now completed nest. It was small and asymmetrical, being tucked into a fork where a small branch of about finger thickness grew up from the branch on which the nest rested. It appeared as little more than a thickening of the branch at that point and was difficult to see unless one knew exactly where to look. Indeed, it was so well hidden that a friend to whom I showed it returned some days later on his own and was unable to locate it. The nest was in a mupundu tree (species believed to be *Parinari curatellifolia*), which is quite common in the area. Its wood is hard and quickly blunts saws, and its fruit is much appreciated as a relish, which may explain why these trees are left when others are felled. The Black Cuckoo Shrike *C. phoenicea* and the White-breasted Cuckoo Shrike *Coracina pectoralis* were both present in the same area.

A member of the local Fire Brigade very kindly climbed the tree for me on 30th October and found the nest complete but empty. While he was near the nest the female flew around whistling an anxious "tseeoo". She even flew into the tree and perched only a short way from him while he examined the nest. At 16.30 hrs. local time on 2nd November the female was sitting on the nest. On 4th November it contained two eggs. The female was not there when we arrived but soon returned to fly around calling as before; after a short time she gave up and flew off. One egg was collected, which was quite fresh. Major J. C. Robjent of Choma, Zambia has very kindly supplied the following descriptions after comparing the egg to four of *C. phoenicea*, 2 × C/2 taken at Strathmore (20° 35′ S., 29° 05′ E.), Rhodesia by J. S. Carlisle:—

"*C. phoenicea*. Yellowish green variously speckled, not heavily, dark brown and purplish slate with some underlying ashy shell marks, tending to form a ring round the larger end. Average of 23 eggs 23·9 × 17·1 (21·5 — 26·1 × 16·3 — 18) (McLachlan & Liversidge 1957).

C. quiscalina. 1 of C/2. 4 Dec. 1971, in Zaire, near Ndola. 23·7 × 18·0 mm. Pale sage green, mostly lightly speckled dark brown and underlying purplish slate and ashy shell marks somewhat more concentrated round the broadest part. Speckles rather small, some up to 3 mm in size.

The egg is very like that of *C. phoenicea*."

The adult females of the two species are very similar in size. Two *phoenicea* weighed 35·5 and 36·0 g; two *quiscalina* 34·0 and 35·0 g (R. J. Dowsett *in litt.*). Mackworth-Praed & Grant (1963) give wing-lengths of 95 – 108 for *phoenicea* (as *sulphurata*) and 95 – 105 mm for *quiscalina*.

The remaining egg had hatched by 28th November, when the chick was first seen, but the incubation period cannot be calculated. On 10th December the young bird could be seen on the nest, its short tail, yellowish olive in colour, showing over the edge on one side, its head and bill being held a little above the nest on the other. On 13th December the nest was empty and it is reasonable to assume that the chick fledged successfully. The nest was collected and the branch was found to be 167 mm in circumference (about the size of a slender wrist). The nest was made almost entirely of fine threads of lichen, bound together and to the branches with spider web. The outside of the nest was fairly well covered with bits of lichen similar to those growing on the bark of the tree. The maximum diameter of the nest cup was 53 mm and the minimum 46 mm. At the lowest point it was 23 mm deep. If incubation began on 3rd November and the young bird flew on 12th December the combined period for incubation and fledging would be about 39 days, and not less than 37 nor more than 41 days. The nest and egg are now in the collection of the National Museum of Zambia, Livingstone.

Benson *et al.* (1971) record gonad-activity in October, and egg-laying (calculated from examination of collected specimens) in November and January. Thus the present record falls within this period.

Brosset (1972) gives details of the reproductive cycle, from nest-building to the fledging of the young, of a pair of *C. quiscalina* in north-east Gabon. As in the present record, material of two nests consisted entirely of lichen and spider web. A clutch of two eggs was pale greenish blue with red-brown spots, approximate measurements 17 × 23 mm. The rather small difference in colour apparent from that of the eggs described above could well represent geographical variation. The incubation period is given as 20 days, and the fledging period for one young as 22 days, i.e. a combined total of 42 days as against "37 days and not more than 41 days" above. Brosset also found that nest-building, incubation and brooding of the young was entirely by the female, although during incubation the male defended the neighbourhood of the nest when the female was absent. And for the first 15 days after hatching a young bird was fed on grubs by the male alone, thereafter by both parents.

Acknowledgements: I am indebted to Major J. C. Robjent for so kindly describing the eggs; to the Keeper of Oology, Queen Victoria Museum, Salisbury, Rhodesia for generously loaning the eggs of *C. phoenicea* for comparison; and to R. J. Dowsett, Keeper of Natural History, National Museum, Zambia, and C. W. Benson, who have helped with the preparation of this paper.

References:

Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. Stuart. 1971. *The birds of Zambia.* London: Collins.

Brosset, A. 1972. Etude de la reproduction de l'Echenilleur Pourpré. *Alauda* 40: 145–153.

Mackworth Praed, C. W. & Grant, C. H. B. 1963 *African handbook of birds*, Series II, Vol. 2. London: Longmans.

McLachlan, G. R. & Liversidge, R. 1957. *Roberts birds of South Africa.* Cape Town: Trustees of the South African Bird Book Fund.

[Dr. A. Prigogine, with long experience of the eastern Zaire, like the Rev. Dr. Serle, also knew of no description of the nest and eggs of *Campephaga quiscalina*—Ed.]

North American Ruddy Turnstones in Britain

by W. Earl Godfrey

Received 19th June 1972

Harrison & Harrison (1971) have identified a specimen of the Ruddy Turnstone taken on the Medway Estuary, Kent, England, as an individual of the North American subspecies, *Arenaria interpres morinella*. As additional evidence of the occurrence of the race *morinella* in the Old World, they cite two marked individuals, one of which was ringed in England and later collected while breeding on Ellesmere Island, N.W.T., Canada; the other ringed on Ellesmere Island shortly after it was hatched there and later recovered in Portugal.

Both these ringed birds are from the breeding population of Ellesmere Island and therefore they belong to the nominate race, not *morinella*. These two examples merely demonstrate that the Ellesmere Island population of this primarily Old World race, *A. i. interpres*, winters in the Old World. They have no bearing on the status of *A. i. morinella*, and do not support the suggestion that there may be a regular migration route of *morinella* into western Europe.

The Medway specimen may well be correctly referred to *morinella* but on the basis of colour alone. Wing length is not a reliable criterion. As pointed out previously (Godfrey 1953; Parmelee & MacDonald 1960), males of the Ellesmere Island population of *Arenaria interpres interpres* have an average wing chord length of 147 mm, precisely that given for the Medway specimen.

References:

Godfrey, W. E. 1953. Notes on Ellesmere Island birds. *Canadian Field-Naturalist* 67: 89–93.

Harrison, J. M. & Harrison, J. G. 1971. North American Knot and North American Ruddy Turnstone in Britain. *Bull. Brit. Orn. Cl.* 91: 167–171.

Parmelee, D. F. & MacDonald, S. D. 1960. The birds of west-central Ellesmere Island and adjacent areas. *National Museum of Canada, Bull.* 169: 1–103.

An African record of the Hudsonian Curlew *Numenius phaeopus hudsonicus* Latham

by Aidan Sudbury & Geoffrey Field

Received 19th June 1972

On 10th April, 1972, at Aberdeen Creek, near Freetown, Sierra Leone, we were together when we both identified a bird which we had no doubt was a Hudsonian Curlew *Numenius phaeopus hudsonicus*. But to make doubly sure, G. F. on his own re-visited the creek on 25th May, when at 17.30 hrs he again found what was presumably one and the same individual. It was high tide, and the bird was standing in a party with 12 Whimbrels *Numenius p. phaeopus* (Linnaeus) on stakes, where an attempt was being made to re-build the broken end of a bund. They all flew off at his approach along the bund, but circled round and landed back on the stakes despite his standing only 20 yards away. He was therefore able to make a direct comparison of the Hudsonian Curlew with the 12 Whimbrels, and they only flew away again when eventually he advanced to only about 15 yards range.

In flight, the Hudsonian Curlew was immediately obvious because of the completely brown back and rump; but apart from this, it was a warmer colour, tawny rather than brown and white, and easily recognisable even when the back was hidden. The upper wing surface appeared distinctly two-toned, with the primaries and leading edge of the wing (particularly at the shoulder), darker brown and with the remainder light tawny brown.

At rest, it appeared to be of exactly the same size as the Whimbrels, although the beak was distinctly longer than in the bird immediately beside it, and longer than in almost all the other birds. The shade and colour of the beak was as in the Whimbrels. The eyestripe was whiter, and the crown darker brown, than in all the other birds. Whereas they had the eyestripe light brown finely streaked with white, this bird had an almost pure white stripe, the whitest part of the bird. The dark smudge on the lores was more pronounced. The upper parts were similar to those of the Whimbrels, but the wings, instead of being boldly brown and white, were softly, more closely, mottled brown and fawn-white. The under parts were nowhere pure white, the chin being whitest, almost as white as the eyestripe. The neck and breast were much less definitely marked, more softly etched fawn-brown, and the under parts as a whole were fawn based, not white-based. The under wing-coverts were a rather rich tawny-and-brown, whereas in Whimbrels these are very clearly barred ash-brown and white. The under tail-coverts and flanks were the same tawny-and-brown.

In summary, apart from the completely brown back and rump, this bird, a Hudsonian Curlew, was basically buff, and appeared brown rather than grey-brown in comparison with the Whimbrels.

This appears to be the first African record of *Numenius p. hudsonicus*. Thus White (1965, *Revised check list of African non-passerine birds*, Government Printer, Lusaka: 127) lists only *N. p. phaeopus*, which is of course well known as a regular visitor. Nor indeed does Vaurie (1965, *Birds of the palearctic fauna, Non-Passeriformes*, H. F. &. G. Witherby, London: 426) give any record of *hudsonicus* from the Palearctic Region. However, in the British Ornithologists' Union's publication (1971, *The status of birds in Britain and Ireland*, Blackwell Scientific Publications, Oxford: 102) *hudsonicus* is recorded as having been identified twice, at Fair Isle and in Kerry. Nevertheless, stray birds of this form making an eastward crossing of the Atlantic must be altogether exceptional.

A revised description of the Hungarian race of the Short-toed Lark *Calandrella brachydactyla* (Leisler)

by Mihaly Endes

Received 20th June 1972

The Short-toed Lark was first observed in Hungary by Schenk on 21st June 1907, and assigned by him (1907) to the nominate form. However from field observations Charteris (1934) disagreed, and thought that Hungarian birds were *C. b. hermonensis* Tristram of the Near East. On the other hand Nagy (1940) stressed their similarity with *C. b. longipennis* (Eversmann). It was left to Horváth (1956) to establish their uniqueness and to name them *hungarica*. Vaurie (1959) seems to have overlooked Horváth (*op. cit.*), and places Hungary as within the range of nominate *brachydactyla*. Peters (1960) duly lists *hungarica*, but stigmatises it with a question mark. Endes (1970) has taken due notice of it in his full account of the distribution of *Calandrella brachydactyla* as a whole. *C. b. hungarica* is known at the present time only from two isolated localities in eastern Hungary, consisting of alkaline grassy and wormwood plains centred around Nagyiván, 47° 30′ N., 20° 56′ E. and Nyiró rétje, 46° 30′ N., 20° 38′ E. This restriction is in contrast to the more continuous distribution of the other races.

The material which was used by Horváth (1956) in describing *hungarica* is no longer available, except for two specimens in the Harrison Zoological Museum, Sevenoaks, England, received from Horváth at the time of formulating his description. Both were collected by Horváth himself, at Nagyiván on 5th May 1956, further particulars being:—

♂, collector's no. 56.5.1, Harrison Zool. Mus. no. 2010/1.
♀, collector's no. 56.17.1, Harrison Zool. Mus. no. 2011/2.

I have not been able to examine these two specimens. Nevertheless I have assembled 16 others, all adult, as follows:—

Hungarian Ornithological Institute: one ♂, 28th July 1951, one ♂, one ♀, 28th June 1965, Nagyiván.

Hungarian Museum of Natural History: five ♂♂, four ♀♀, 9th July 1959, Nagyiván.

My own collection: one ♂, one ♀, 15th April 1971, one ♂, one ♀, 29th May 1969, Nyiró rétje.

This material has been compared with that of other races in the British Museum (Natural History) and the Zoologisches Museum, Berlin. Comparisons in life between *hungarica* and nominate *brachydactyla* in Rumania, Yugoslavia and Bulgaria have also been made.

The adult of *hungarica* differs, (1) from nominate *brachydactyla* and *rubiginosa* in lacking totally any rufous colour on the upperparts; (2) from *dukhunensis*, *woltersi* and *artemisiana* by a shorter wing length; (3) from *hermonensis* by a shorter culmen; and (4) from *longipennis* by a lesser width and depth of bill.

Calandrella b. hungarica never has a rufous crown, this holding good without exception for all 16 specimens examined. The overall appearance above is brownish rather than greyish as stated by Horváth (1956). The upperparts as a whole exhibit markedly contrasting elements and an intense streakiness. This is the result of each feather of the crown, mantle and back having a longitudinal broad dark brown central stripe, margined with buff. The feathers of the wing-coverts and upper tail-coverts are generally similar—dark brown with paler borders. On the underparts, in contrast to the other races, *hungarica* is darker, more greyish, with a light buff shade on the breast. This greyishness also shows on the under wing-coverts and axillaries.

Using the material examined by myself, measurements in millimetres of *hungarica*, with averages in brackets, are as follows:—

	♂♂	♀♀
Wing	90·5 – 97·1 (92·8)	86·0 – 94·5 (89·8)
Tail	56·4 – 69·0 (60·2)	52·0 – 61·0 (56·5)
Culmen	9·9 – 10·7 (10·3)	9·9 – 10·1 (10·0)
Bill width	4·4 – 5·0 (4·6)	4·4 – 4·9 (4·6)
Bill depth	4·5 – 5·5 (5·0)	4·8 – 5·5 (5·1)

Horváth (1956) gives much longer measurements for the bill (13·0 – 14·9 in ♂♂, 12·4 – 13·6 in ♀♀). But he measured from the skull, whereas my measurements are for the culmen ridge (rhamphotheca) only.

Average measurements for males of other races (samples of ten of each), including also those for *hungarica* from above, are as follows:—

Calandrella brachydactyla	Wing	Tail	Culmen	Bill width	Bill depth
brachydactyla (Leisler)	94·5	60·0	11·1	5·2	5·4
dukhunensis (Sykes)	99·0	57·3	10·6	5·2	5·8
longipennis (Eversmann)	92·0	58·0	10·4	5·4	5·6
hermonensis Tristram	93·9	60·0	11·1	4·8	5·2
artemisiana Banjkowski	94·9	60·0	10·5	4·7	5·4
rubiginosa Fromholz	94·2	60·0	10·7	5·1	5·8
woltersi Kumerloeve	95·0	60·0	11·2	4·8	5·2
hungarica Horváth	92·8	60·2	10·3	4·6	5·0

There is a slight tendency to a short wing length in *hungarica*, but the most striking difference in comparison with the other races is in the size of the bill, all three figures being the shortest of all. The race *woltersi*, with type locality Amik Gölü (Lake Antioch), near the border of Turkey and Syria, was described only quite recently (Kumerloeve 1969).

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References:

Charteris, G. 1934. A rövidujju pacsirta fészkelése a Hortobagyon. *Aquila* 38/41: 346–347.

Endes, M. 1970. *Die Kurzzehenlerche.* Wittenberg–Lutherstadt: Neue Brehm-Bücherei.

Horvath, L. 1956. A new race of the Short-toed Lark from Hungary. *Bull. Brit. Orn. Cl.* 76: 132.

Kumerloeve, H. 1969. Zur rassenbildung der Kurzzehenlerche, *Calandrella brachydactyla*, im vorder-asiatischen Raum. *Journ. Ornith.* 110: 324–325.

Nagy, J. 1940. *A hortobagyi sziki pacsirta.* Debrecen: A Hortob. Muz. Kiadv. 3.

Peters, J. L. 1960. *Check-list of the birds of the world.* 9. Cambridge, Mass.: Museum of Comparative Zoology.

Schenk, J. 1907. Die Heuschreckenplage auf dem Hortobagy imJ. 1907 und die Vogelwelt. *Aquila* 14: 223–275.

Vaurie, C. 1959. *The birds of the palearctic fauna. Passeriformes.* London: H. F. &. G Witherby.

Weights of some birds of north-central Venezuela

by Charles T. Collins

Received 17th August 1972

In the course of mist-netting operations conducted as part of field studies of the swifts of north-central Venezuela a number of other birds were caught. Whenever time permitted these were examined for moult and parasites, weighed, and in some cases banded, before being released. The body weights are presented here as such data are still scarce for most species of neotropical birds. In some areas outside Venezuela, as Trinidad and Surinam, workers have compiled extensive weight data on some of the common species (Haverschmidt 1948, 1952; Snow & Snow 1963). As field workers in the neotropics begin to investigate such topics as energetics, growth rates, and seasonal changes in body components there will be an increased need for information on the weights of free-living birds. The recent availability of compact, reliable, and relatively inexpensive spring balances to replace cumbersome beam balances makes it easy to obtain these data as a part of routine netting or trapping activities, and it should be further encouraged.

The data presented here were mostly obtained from birds netted in Portachuelo Pass, 20¼ km north of Maracay, in the Parque Nacional Henri Pittier, Aragua, Venezuela, between 26 March and 2 July 1972. Also included are the data from smaller samples of birds netted there on earlier trips (22–25 July 1964; 10–23 November 1966) and around the nearby Estacion Biologica de Rancho Grande. Portachuelo Pass, at an elevation of 1136 m, is noted for the bird and insect migrations observed there. These movements as well as the ecology of the cloud forest around Portachuelo Pass have been described earlier (Beebe 1949; Beebe & Crane 1947).

In 1972 weights were obtained by means of Pesola Spring Balances of several capacities. Weights under 10 grams were recorded to the nearest tenth of a gram, those from 1– to 100 grams to the nearest quarter gram, and those from 100 to 400 grams to the nearest gram. A single spring balance accurate to one quarter gram with a 150 gram capacity was used in 1964 and 1966. When more than five values are available, the sample size, range, mean and standard deviation are presented. The order and nomenclature follow Meyer de Schauensee (1966).

My field work in Venezuela was supported by grants from the Frank M. Chapman Memorial Fund of the American Museum of Natural History. I am grateful to the Ministerio de Agricultura y Cria and particularly Dr. Gonzalo Medina Padilla for permission to stay at Rancho Grande and carry out my studies there.

WEIGHTS

Geotrygon violacea: Unsexed 101½.
Aratinga wagleri: ♂♂ 190, 203.
Pyrrhura haematotis: ♂♂ 70¾, 74¼; ♀ 64.
Pionus sordidus: ♂ 272.
Streptoprocne zonaris: 19 unsexed 85¾ — 107¼ (98·09 ± 5·44).
Cypseloides cherriei: ♂♂ 22¾, 21¾, 21¾; ♀ 22; unsexed 22.
Chaetura vauxi: 174 unsexed 15¼ — 22 (18·11 ± 1·20).
Chaetura cinereiventris: 83 unsexed 13½ — 20½ (15·71 ± 1·28).
Aeronautes montivagus: 50 ♂♂ 18¼ — 22¾ (20·57 ± 0·95); 39 ♀♀ 17¼ — 21¾ (19·74 ± 1·09).
Glaucis hirsuta: ♀ 8·5; unsexed 7·3.
Campylopterus falcatus: ♂ 8·0.
Florisuga mellivora: ♀♀ 7·5, 7·5, 9·2.
Colibri delphinae: ♂ 7·0.
Chrysuronia oenone: 28 ♂♂ 4·7 — 6·3 (5·33 ± 0·41); 8 ♀♀ 4·3 — 5·3 (4·79 ± 0·37).
Amazilia tobaci: ♂ 4·7.
Heliodoxa leadbeateri: ♂♂ 8·5, 7·5; 6 ♀♀ 6·6 — 7·5 (7·13 ± 0·39).
Sternoclyta cyanopectus: 10 ♂♂ 8·4 — 9·4 (8·80 ± 0·34); 6 ♀♀ 9·0 — 10·3 (9·53 ± 0·45).
Coeligena coeligena: unsexed 8·6.
Aglaiocerceus kingi: ♂♂ 5·4, 5·5; ♀ 4·5.
Schistes geoffroyi: ♂ 4·0.
Aulacorhynchus sulcatus: ♂ 173.
Dendrocincla fuliginosa: ♀ 35½.
Sittasomus griseicapillus: ♂ 13; ♀ 12¾.
Xiphorhynchus guttatus: ♂ 47¼.
Premnoplex brunnescens: ♂ 18¾.
Pipreola formosa: ♂ 42½.
Myiodynastes maculatus: ♀ 41·5; unsexed 41·5.
Myiodynastes chrysocephalus: ♂ 39½.
Contopus fumigatus: ♂17¾.
Pyrrhomyias cinnamomea: ♀ 9·7.
Myiopagus gaimardii: ♂ 15; ♀ 15; unsexed 13¼.
Leptopogon superciliaris: ♀ 13.
Progne chalybea: ♀ 33½.
Notiochelidon cyanoleuca: 15 unsexed 9·5 — 11·3 (10·48 ± 0·47).

Stelgidopteryx ruficollis: Unsexed 15¾.
Cyanocorax yncas: 88¼; unsexed juv. 85.
**Catharus fuscescens:* Unsexed 27¼ (no visible fat) 1st May; 36¾ (heavy fat) 8th May.
Platycichla flavipes: ♂ 50.
Turdus olivater: ♂ 69¾; unsexed 74.
Turdus leucomelas: ♀ 72.
Vireo gilvus: Unsexed 11½.
Psarcolius angustifrons: ♂ 278; ♀♀ 167, 177, 181, 184.
**Dendroica striata:* ♂ 15 (heavy fat) 7th May.
**Setophaga ruticilla:* ♀ 10¼ (heavy fat) 16th April.
Myioborus miniatus: unsexed 10¼.
Cyanerpes caeruleus: 12 ♂♂ (ad. and imm.) 5 ♀♀, 2 unsexed (combined sample) 9·8 — 13 (11·85 ± 0·99).
Tersina viridis: ♂ 29¼; ♀ 31¾.
Pipraeidea melanonota: ♂ 17½.
Tangara arthus: ♂ 20.
Tangara gyrola: ♀ 19¼.
Thraupis episcopus: ♂♂ 32, 34, 38½; unsexed 34¾; juv. 34½.
Thraupis palmarum: ♂ 35½.
Piranga leucoptera: ♂♂ (6 values from 3 banded individuals) 16¾ — 19 (17·66 ± 1·19).
Tachyphonus rufus: ♂ 35; ♀ 33.
Chlorospingus ophthalmicus: ♂ 18·2; unsexed 18.
Saltator maximus: ♀ 43¾.
Cyanocompsa cyanoides: ♀ 25¾.
Sporophila nigricollis: ♀ 9·8.
Spinus xanthogaster: ♂♂ 11¼, 11½, 11½.

*North American migrants

Some of the species included here also occur in Trinidad and were examined there (Snow & Snow 1963). In most cases, where adequate samples permit comparisons, the weights are very similar for the two localities. However, *Myiodynastes maculatus* in Venezuela appears to weigh somewhat less than in Trinidad, while *Chaetura cinereiventris* and the females of *Florisuga mellivora* appear to weigh more. The weights for *Streptoprocne zonaris* differ appreciably in the two locations with those in Venezuela being nearly 50% heavier (85–107 g) than the same species in Trinidad (60–74 g). No explanation is presently available for a difference of this magnitude, particularly since individuals of this species occurring in Trinidad are thought to be post-breeding wanderers from nearby parts of northern Venezuela (Snow 1962).

In the case of *Aeronautes montivagus* a significant sexual dimorphism is apparent in weight as well as in plumage. The males are heavier than the females as has also been noted for another swift, *Cypseloides rutilus*, in Trinidad (Collins 1968). Males appear to be lighter than females in *Sternoclyta cyanopectus* while the converse seems true in two other species of hummingbirds, *Chrysuronia oenone*, and *Heliodoxa leadbeateri*. However, largre samples for one or both sexes of these hummingbirds are needed before this can be firmly established.

References:

Beebe, W. 1949. The swifts of Rancho Grande, North-central Venezuela, with special reference to migration. *Zoologica* 34(2): 53–62.
Beebe, W. and Crane, J. 1947. Ecology of Rancho Grande, a subtropical cloud forest in northern Venezuela. *Zoologica* 32(1): 43–60.
Collins, C. T. 1968. The comparative biology of two species of swifts in Trinidad, West Indies. *Bull. Fla. St. Mus.* 11(5): 257–320.
Haverschmidt, F. 1948. Bird weights from Surinam. *Wilson Bull.* 60(4): 230-239.
Haverschmidt, F. 1952. More bird weights from Surinam. *Wilson Bull.* 64(4): 234-241.
Meyer de Schauensee, R. 1966. The Species of Birds of South America. Narberth, Penn.: Livingston.
Snow, D. W. 1962. Notes on the biology of some Trinidad swifts. *Zoologica* 47(3): 129- 139.
Snow, D. W. and Snow, B. K. 1963. Weights and wing-lengths of some Trinidad birds. *Zoologica* 48(1): 1–12.

Notes on the furnariid *Automolus (Hylocryptus) erythrocephalus*

by Raymond A. Paynter, Jr.

Received 22nd August 1972

Automolus erythrocephalus (Chapman) is confined to a very limited area of the subtropical western slopes of the Andes in south-western Ecuador and north-western Peru. It seems to have been recorded previously only from Alamor (type locality), La Puente, and Paletillas in Loja, Ecuador and from Palambla in Piura, Peru. Less than a dozen specimens have been reported in the literature and nothing has been recorded about the living bird.

In October 1965 I saw the species twice at Yamana (alt., 1,100 m) in the Casanga Valley of Loja. Although concealed about a metre above the ground in dense scrub near a brook, loud staccato calls, reminiscent of those of a flicker (*Colaptes*), called my attention to its presence on 16 October. Recording of the calls were made (Fig. 1) and the bird, a male with a yellow eye and weighing 48·0 g, was collected. Three days later, in the same area, a second specimen was obtained. It was a female, whose eye was brownish gray, weighing 47·9 g. Both specimens were in fresh plumage and had small gonads.

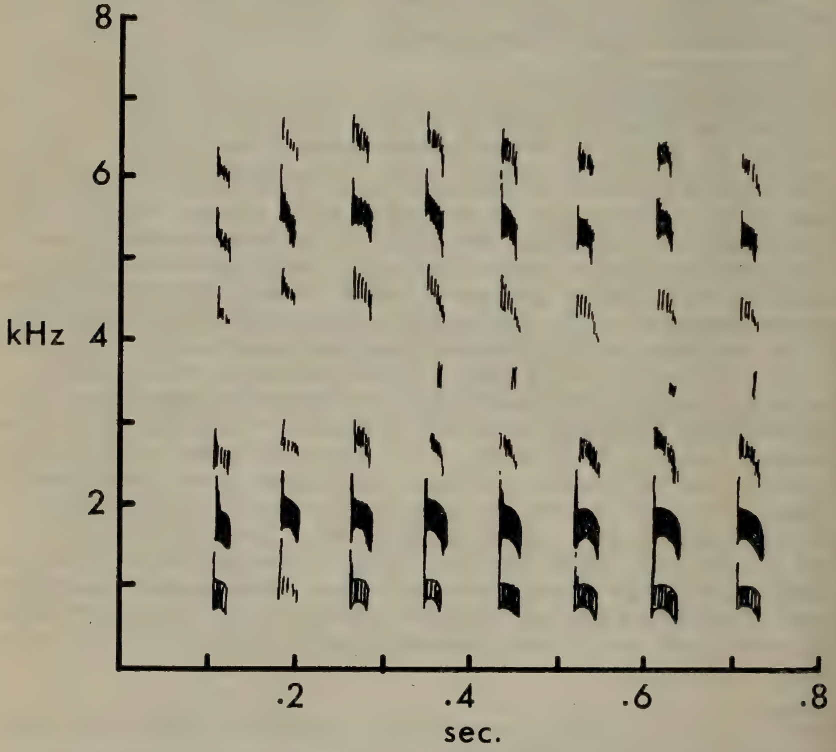

Figure 1. Sonagram of call of *Automolus erythrocephalus*. (Sonagram courtesy of M. Ross Lein).

The four localities where the species has been found before seem to be in the humid subtropical zone. On first consideration the discovery of the species in the arid, sparsely vegetated Casanga valley is unexpected. However, there are patches of fairly thick vegetation at the edges of the valley where brooks descend from the mountains and the steepness of the slopes is such that agriculture is impossible. It appears, therefore, that the present paucity of vegetation and the aridity of the valley are the result of man's activities and that species such as *Automolus erythrocephalus* and *Atlapetes albiceps* (Paynter 1972) exist in the Casanga Valley only as relicts in the few pockets of heavier vegetation still extant.

The species was described by Chapman (1919) who at the same time created the monotypic genus *Hylocryptus* for the taxon, believing that the new bird's somewhat longer, slenderer and more decurved bill was sufficiently distinctive to separate it generically from *Automolus*. Neither Hellmayr (1925), Zimmer (1935, 1936), nor Peters (1951) questioned the generic allocation of the species, but by current standards *Hylocryptus* certainly must be considered inseparable from *Automolus*, as already detailed by Vaurie (1971).

Of greater interest than the generic allocation of this species is its relationship with other furnariids. Hellmayr (1925) was the first to suggest that *erythrocephalus* seemed allied to *rectirostris* of south-eastern and central Brazil. Zimmer (1936) agreed with this, shifted *rectirostris* from *Automolus* to *Hylocryptus*, and even proposed the two forms might be conspecific. Peters (1961) followed Zimmer. Vaurie (1971) also thought the taxa to be closely allied, but kept them as distinct species, a course with which I agree.

Nothing specific is known of the habitat preferences of *A. rectirostris*. The localities from which specimens have been obtained seem to be in the *campos cerrados* of the Brazilian plateau, a habitat which is physiographically remarkably similar to that of the Casanga Valley. If *erythrocephalus* and *rectirostris* do indeed occupy similar habitats, the supposition that they are closely related is further strengthened. The two species would appear to be relict populations of a form that ranged across the Amazon basin during a dry inter-glacial period when the dense forest of the pluvial periods was restricted to isolated patches and a nonforest type of vegetation predominated (see Haffer 1969, and Vuilleumier 1971). With the return of a glacial period the Amazonian forests expanded from their isolated refugia, forcing the ancestral population of *A. erythrocephalus* and *A. rectirostris* into higher, drier areas, where it became divided and isolated, eventually differentiating into the two species known to-day.

References:

Chapman, F. M. 1919. Descriptions of Proposed New Birds from Peru, Bolivia, Brazil, and Colombia. *Proc. Biol. Soc. Wash.* 32: 253–268.

Haffer, J. 1969. Speciation in Amazonian Forest Birds. *Sci.* 165: 131–138.

Hellmayr, C. E. 1925. Catalogue of Birds of the Americas. *Publ. Field Mus. Nat. Hist., Zool. Ser.* 13(4): 390 pp.

Paynter, R. A., Jr. 1972. Biology and Evolution of *Atlapetes schistaceus* Species-group (Aves: Emberizinae). *Bull. Mus. Comp. Zool.* 143: 297–320.

Peters, J. L. 1951. *Check-list of Birds of the World*. Vol. VII. Cambridge: Museum of Comparative Zoology.

Vaurie, C. 1971. *Classification of the Ovenbirds* (*Furnariidea*). London: H. F. & G. Witherby.

Vuilleumier, B. S. 1971. Pleistocene Changes in the Flora and Fauna of South America. *Sci.* 173: 771–780.

Zimmer, J. T. 1935. Diagnoses of New Species and Subspecies of Furnariidae from Peru and other parts of South America. *Amer. Mus. Novitates* 819: 8 pp.

— 1936. Notes on the Genera *Pseudocolaptes*, *Hyloctistes*, *Hylocryptus*, *Thripadectes* and *Xenops*. *Amer. Mus. Novitates* 862: 25 pp.

Races of the lark *Mirafra africana* in the Tanganyika-Nyasa montane group

by R. J. Dowsett

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INTRODUCTION

The mountains of southern Tanzania, northern Malawi and north-eastern Zambia are closely related faunally and constitute the Tanganyika–Nyasa montane group (Dowsett 1971 and in prep.). Within this group there are a few isolated montane grasslands, in three areas of which the lark *Mirafra africana* occurs.

Reichenow (1900) described the race *nigrescens* from a single specimen from south-western Tanzania (type-locality: Elton Pass, Ukinga). Some 100 km to the east at Njombe, Lynes (1934) collected a single bird, which has also been referred to *nigrescens* hitherto. The third population, some 200 km south of Ukinga on the Nyika Plateau, was described as *nyikae* from a series examined by Benson (1939). White (1960) examined the Njombe specimen, considered it very similar to Nyika birds and so, believing it to be *nigrescens*, treated *nyikae* as a synonym. This move was followed by Benson *et al.* (1971). It is unfortunate that White evidently did not see the type of *nigrescens* which, as Sclater (1926) had remarked, was well-named in being very blackish above —in fact quite unlike the Nyika and Njombe birds.

I was recently able to collect a near topotypical series of *nigrescens* from the Kitulo Plateau in south-western Tanzania (9° 05′ S., 33° 55′ E.). Comparison of these with the types of *nigrescens* and *nyikae*, the Njombe bird and a series of topotypical *nyikae*, as well as lowland races, clarifies the situation as follows:—

M. a. nigrescens Reichenow (1900). Elton Pass, Ukinga.

Upperparts blackish, some feathers with chestnut or buffy edging; underparts buffy, with black drop-shaped markings on throat, upper breast and flanks. Tail very short, 52 – 56 (mean 53·6) per cent of wing length. Hind claw straight and long, 12·5 – 18·0 mm (mean 15·0 mm).

Range: Confined to the Kitulo Plateau in south-western Tanzania, where common on montane grasslands at about 2,750 metres (9,000 feet).

M. a. nyikae Benson (1939). Nyika Plateau, Nyasaland = Malawi.

Upperparts dark reddish-brown or chestnut, with blackish streaking; underparts buffy, with drop shaped markings browner than in *nigrescens*. Tail very short, and tail : wing ratio similar to that of *nigrescens*. Hind claw straight and very long, 15·5 – 22·0 mm (mean 19·5 mm).

Range: Known only from two localities – the Nyika Plateau on the border of northern Malawi and Zambia (where quite common on grasslands between about 2,100 and 2,550 metres), and 10 km south of Njombe in southern Tanzania (a single specimen taken at 2,000 metres).

SUBSPECIFIC DIFFERENCES

I collected ten adult *nigrescens* on 19 and 20 October 1971 at Kitulo, at an altitude of about 2,750 metres. I have compared these directly to seven topotypical *nyikae*, and to series of several lowland races formerly part of the collection of C. M. N. White, and now in the National Museum of Zambia at Livingstone. Furthermore, C. W. Benson and R. Wagstaffe have kindly compared two of my *nigrescens* (donated to the British Museum, Natural History) with the type of *nigrescens*, the Njombe specimen and a further series of eight topotypical *nyikae* (including the type) at Tring.

Measurements taken by Benson and myself are strictly comparable and are combined in the Table. One juvenile *nyikae* is excluded, and two birds which were unsexed by the collectors are here sexed on size.

Table. Measurements (mm) and weights (g) of *Mirafra africana nigrescens* and *nyikae*.

	nigrescens			*nyikae*		
	range	mean	n	range	mean	n
♂♂ Wing	99–104	101·3	8	99–104	100·7	10
Tail	54–58	55·5	8	52–59	54·1	12
Tail/Wing %	52–56	54·2	8	50–57	53·5	10
Culmen	20·5–22·5	21·7	8	18·5–23·0	21·0	12
Hind claw	12·5–16·5	14·8	8	15·5–22·0	19·5	12
Weight	50·0–54·5	51·9	8	51·0–51·7	51·4	2
♀♀ Wing	91–92	91·7	3	92	92·0	1
Tail	47–48	47·7	3	48–49	48·3	3
Tail/Wing %	52	52·0	3	52	52·0	1
Culmen	19·0–20·0	19·3	3	18·5–20·5	19·7	3
Hind claw	12·5–18·0	15·7	3	18·5–20·0	19·5	3
Weight	44·0–45·5	44·8	2	no sample		

Note: Culmen lengths are measured from the skull.

It is clear from the measurements above that the two races are very similar in overall size. Both have very short tails, some 50 to 57 per cent of the wing length, compared to the 60 to 66 per cent mentioned by White (1960) for lowland races. Both also have long, rather straight hind claws; Benson (1939) pointed out that *nyikae* from the Nyika Plateau had much longer hind claws than the type of *nigrescens*, and this receives support from the longer series of each race now available. It is not clear why *nyikae* should have a longer hind claw as both are almost entirely terrestrial and occur on similar ground. The single Njombe bird (a male) has a hind claw of only 16 mm, which is very short but matched by one Nyika male of 15·5 mm.

Sexual dimorphism in size, though not colour, is well marked in both races, as shown in the Table. Males are heavier than females, and have a much longer wing, tail and culmen, although there seems to be no sexual difference in hind claw length.

There are some very striking colour differences between the two races, which have been summarised above. My series of ten *nigrescens*, taken in October, are strictly comparable to five topotypical *nyikae* collected between September and November, and to the Njombe bird (which was a male in breeding condition, taken in December). The remainder of the *nyikae* examined were taken in June (1), July (6) and January (3), and the type of *nigrescens* (unsexed, but doubtless a female with its wing of 92 mm) was collected in July. All specimens taken between September and November, of both races, have rather unworn remiges but worn body plumage. The two January adults of *nyikae* are in active wing and body moult. In fresh plumage the feathers of the upper parts of *nyikae* are much brighter chestnut, with pale buff edgings to many and a blackish penultimate edging. There are no specimens of *nigrescens* in unworn body plumage. Benson & Wagstaffe (*in litt.*) find the type of *nigrescens* is very similar in colour to two of my Kitulo birds, and that Lynes's Njombe bird agrees in colour with topotypical *nyikae*.

The colours of the soft parts are similar in the two races, namely iris light brown, bill dark above with cutting-edge and lower mandible paler horn, and tarsus straw (personal observation). The shape of the bill and hind claw seem similar in the two races.

DISCUSSION

It is not surprising that there should be such distinct differences between the Nyika and Kitulo populations; not only are they some 200 km apart, but Kitulo has a high annual rainfall of 150 – 200 cm (Sheep Station records), the Nyika grasslands only some 100 cm (Chapman & White 1970). Both White (1960) and Hall & Moreau (1970) have suggested that these montane larks are perhaps incipient species; certainly they seem to be isolated altitudinally from lowland populations and follow the rules of Gloger and Bergmann in being both darker plumaged and larger. It would seem likely from their morphology that both races are long established, particularly *nigrescens*. Most evidence points to the Nyika grasslands having existed for a long time, and indeed Sandelowsky & Robinson (1968) have suggested that there were people living in the Nyika grasslands from 2,000 to 3,000 years B.C. onwards. As Benson (1953) remarked, the claims by Brass (and more recently by W. C. Verboom pers. comm.) amongst botanists, that these grasslands are purely the result of recent burning and timber felling, do not seem convincing. Certainly there is forest regeneration when grassland is protected from fire, and undoubtedly human action has reduced the amount of montane forest in recent years, but as I discuss in detail elsewhere (Dowsett in prep.) some of the Nyika grassland must be long established. But clearly further investigation is needed to see if there is any contact between lowland forms of *Mirafra africana* and the two montane forms, and in particular to see why the anomalous Njombe population should apparently be closer to *nyikae* morphologically, though nearer to *nigrescens* geographically. It is also interesting that there is apparently no montane *Mirafra* on the Ufipa Plateau in south-western Tanzania (personal observation) although *M. angolensis* seems to fill this niche on Marungu in south-eastern Zaire. There are no records of either species from other montane grasslands in the area which might be thought suitable, such as on Mount Rungwe and the Mafingas.

Behaviourally the two montane races of *M. africana* seem no different from lowland forms, and their songs appear to be similar. Both montane forms breed between about October and December, i.e. at the start of the rains, as apparently do some lowland populations in Zambia (Benson *et al.* 1971). There is a record from the Nyika of eggs on 10 November (the female was snared on the nest and her skin is in the British Museum), and a juvenile from there in January. Lynes's Njombe specimen had enlarged testes on 31 December. At Kitulo *nigrescens* was numerous in October, especially in sheep pasture. A number of birds seemed to have nests nearby, and males were in full song from hillocks and earth lumps. Each of the eight males collected had gonads at least 6 mm in length, and both females had evidently laid and had well-developed brood patches.

THE TYPE LOCALITY OF *Mirafra africana nigrescens*

Reichenow (1900) gave the type locality of *nigrescens* as the Elton Pass in Ukinga. This name is no longer in use and could not be traced on any maps. Most authors, e.g. Mackworth-Praed & Grant (1955), can do no more than place it vaguely at about 55 km (35 miles) north of Lake Nyasa. Haldane (1956) mentioned the Elton Plateau and described its topography and avifauna, but he gave few clues to its geographical position. Fortunately Shann (1960) is more helpful: "Elton Plateau. Map A, 1940 refers to Elton's Pass here. (High country rising to 9,000 feet between the Mporoto and Kipengere Mountains, traversed by track from Njia Panda to Ukinga). Vice-Consul Elton came this way in his final expedition in 1877 and referred to it as Merere's Pass." There can be no doubt, therefore, that the Elton Pass was part of the Elton Plateau, which is the area now known as the Kitulo Plateau. The Tanzanian Government has established a sheep raising scheme in the area, and their offices at Kitulo are at about 9° 05′ S., 33° 55′ E. and 2,750 metres above sea level.

ACKNOWLEDGEMENTS

I am most grateful to the Director of Game in Tanzania and his staff for arranging for me to collect in that country, and to the many people who made the visit a success, notably the staff of the Kitulo Sheep Raising Project. Invaluable assistance was given me at Kitulo by my staff Mr. A. Muchindu and Mr. & Mrs. T. Osborne. Dr. G. Mauersberger of the Zoologisches Museum in Berlin most generously sent the type specimen of *M. a. nigrescens* on loan to the British Museum at Tring, and I am most grateful to Mr. P. R. Colston for arranging this loan. Messrs. C. W. Benson and R. Wagstaffe kindly examined specimens at Tring on my behalf, and Mr. M. P. Stuart Irwin generously loaned me material from the collection of the National Museums of Rhodesia at Bulawayo. Messrs. Benson and Irwin, and Mrs. B. P. Hall, have given much help with the literature and have commented on a draft of this paper.

References:

Benson, C. W. 1939. A new lark from Nyasaland. *Bull. Brit. Orn. Cl.* 59: 85–86.

— 1953. Nyasaland and Northern Rhodesia. The Nyika Plateau and its faunistic significance. *Oryx* 2(3): 158–164.

Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. S. 1971. *The Birds of Zambia.* London: Collins.

Chapman, J. D. & White, F. 1970. *The evergreen forests of Malawi.* Oxford: Commonwealth Forestry Institute.

Dowsett, R. J. 1971. The avifauna of the Makutu Plateau, Zambia. *Rev. Zool. Bot. Afr.* 84(3/4): 312–333.

— in prep. Avian zoogeography in the Tanganyika–Nyasa montane group.

Haldane, L. A. 1956. Birds of the Njombe District. *Tang. Notes & Recs.* 44: 1–27.

Hall, B. P. & Moreau, R. E. 1970. *An Atlas of speciation in African passerine birds.* London: British Museum (Natural History).

Lynes, H. 1934. Contribution to the ornithology of southern Tanganyika Territory. *Journ. fur Ornith.* 82, Sonderheft.

Mackworth-Praed, C. W. & Grant, C. H. B. 1955. *African handbook of birds.* Series I, Vol. 2. London: Longmans.

Reichenow, A. 1900. *Die vogel Afrikas.* Vol. I. Neudamm: Neumann.

Sandelowsky, B. H. & Robinson, K. R. 1968. Fingira preliminary report. *Dept. & Antiquities Publicn.* 3. Govt. Press, Zomba. (Not seen, but quoted in *Soc. Malawi Journ.* 24(2), 1971: 53).

Sclater, W. L. 1926. Notes on African birds (larks, flycatchers and waxbills). *Bull. Brit. Orn. Cl.* 47: 28–33.

Shann, G. N. 1960. Tanganyika place names of European origin. *Tang. Notes & Recs.* 54: 79–88.

White, C. M. N. 1960. Some inter relationships in the larks of the *Mirafra africana* group. *Bull. Brit. Orn. Cl.* 80: 7–10.

Pelargopsis capensis innominata in north Borneo

by Kenneth W. Prescott

Received 24th August 1972

Recently, Mees (1971, *Zool. Meded.* 45(21), 1971: 233–236) addressed himself to the complicated permutations of the nomenclature of *Pelargopsis capensis* in Borneo, Java and Sumatra. He recognised one race each for Java (*P.c. javana*, Boddaert 1783), Sumatra (*P. c. cyanopteryx*, Oberholser 1909) and Borneo (*Ramphalcyon* [*Pelargopsis*] *c. innominata*, van Oort 1910). In his revision, Mees shed welcome light on the vexing problem one encounters in the literature, i.e. *javana* from the Philippines and Borneo as well as the Borneo race being variously given as *leucocephala*, *fraseri*, *capensis* and *innominata*.

On 19 June 1945, I collected a Stork-billed Kingfisher on Muara Island in Brunei Bay, north Borneo (approximately 5° N. longitude and 115° E. latitude just north-east of the Sarawak boundary). Despite the statement by Smythies (1960, *Birds of Borneo*, Oliver & Boyd, Edinburgh: 304), it is of interest because it appears to be only the second recorded presence of this kingfisher based on a specimen in the western coastal area of north Borneo; moreover, the plumage is not typical for the Borneo race. Field notes indicated that it was one of a "pair" which I observed on several occasions perched on the bare branch of a tall deciduous tree inland about 50 feet from the ocean and flying out over the beach and along the water's edge. Extremely shy and difficult to approach, I was able to collect but one (only two were seen). The skin is in the Museum of Zoology Collection, University of Michigan, UMZ 114–018, sex (?).

Earlier, Chasen & Kloss (1930, *Bull. Raffles Mus.* 4: 20) had obtained two males of *Ramphalcyon* [*Pelargopsis*] *c. javana* [*innominata*] from north Borneo. One was from Benoni Island in Kimanas Bay on the west coast, and the other from the lowlands of Gomanton near Bilit on the left bank of the Kinabatangan River. Max C. Thompson (1966, *Birds of North Borneo*, University Kansas Publ.: 401) also collected two males (*P. c. fraseri* [*innominata*]) from north Borneo where he reported the kingfisher to be common in the mangroves near Tawau, on the eastern coast of north Borneo.

In comparing my Muara specimen with other *capensis* in the American Museum collection, Dean Amadon and I found that although the primaries and secondaries agreed in colour with those of other Borneo *capensis*, the head and neck were similar to *smithi* of the Phillippines; and in general appearance it seemed closer to *cyanopteryx*. Richard C. Banks kindly compared it with Borneo specimens in the United States Museum National collection, and found that in colour characters it resembled some Borneo specimens, but differed markedly from others. Possibly the distinctness of the Muara bird is based on sex or age, and it seems unlikely that it has any real affinity with Philippine birds or that it represents another Borneo race.

Acknowledgements: I am extremely grateful for the time and advice that Dean Amadon devoted to the many enigmatic questions which this specimen presented and for his helpful suggestions to the earlier drafts of this note. I am also indebted to Richard C. Banks for the comparisons and suggestions he made. Robert W. Storer kindly loaned the specimen from the UMZ collection.

Porzana olivieri and *Limnocorax flavirostris*; a likely affinity

by C. W. Benson & R. Wagstaffe

Received 12th September 1972

During a visit to Switzerland in 1971, C. W. B. was most kindly given by Father Otto Appert a specimen of the little known rail *Porzana olivieri* Grandidier & Berlioz, received by him by chance from a local hunter, who had collected it at Nosy-Ambositra, on the Mangoky River at 21° 55′ S., 44° 00′ E., in south-western Madagascar, on 9 March 1962. The Father was struck by the similarity of this specimen, which is now in the University Museum of Zoology, Cambridge, to illustrations of *Limnocorax flavirostris*

(Swainson) (for spelling as *flavirostris*, not *flavirostra*, see Benson *et al.* 1970: 11), and asked C. W. B. to investigate the possibility of an affinity between the two.

In their original description Grandidier & Berlioz (1929) stress the resemblance of *P. olivieri* to the Asiatic *P. bicolor* Walden, a highland species ranging from Nepal to eastern Burma, south-western China and northern Vietnam, and to some extent also to the smaller but similarly coloured *P. tabuensis* (Gmelin), occurring in the Philippines, New Guinea and Australia eastward to the Marquesas. The resemblance between *P. olivieri* and *P. bicolor* is also stressed by Delacour (1932) and Lavauden (1937).

The possibility that *P. olivieri* might be a close relative of *Limnocorax flavirostris* does not appear to have been considered hitherto, although like Father Appert C. W. B. was struck by their similarity. Most adult specimens of *flavirostris* have the slate of the rump, back and wing-coverts washed with olivaceous chestnut, sometimes extending to the mantle. On the other hand, in all three specimens of *olivieri* personally examined, all apparently adult, the colour is a relatively bright chestnut, to the exclusion of any sign of slate, and extending uniformly from the rump to the mantle, and onto the wing-coverts, the mantle contrasting quite sharply with the slate of the crown and nape. In *olivieri* the slate of the head and the under parts as a whole is a little paler, somewhat more bluish, less blackish in tone. The colours of the soft parts do not seem to have been described by the collector of the specimen, apparently also unsexed, which Grandidier & Berlioz (1929) had before them, although at the time of their examination the bill was pale green-yellow washed with reddish at the base, and the feet horn-yellow. We have examined two of the specimens recorded by Delacour (1932), but they bear no record of the colours of the soft parts. However, Delacour, presumably from freshly killed specimens, records the iris as red circled by rose, the beak greenish yellow and the legs rose-red, with claws brown. Furthermore, when the Mangoky River specimen (a female) was brought to him, in a fresh state, Appert recorded the bill as greenish yellow, the legs and feet red, the iris brilliant dark red, and the eyelids light red. The bill is still more or less the same colour, but the legs and feet have faded to a dull yellowish much as described by Grandidier & Berlioz. The colours as given by Delacour (1932) and by Appert from fresh specimens are very similar to those for *flavirostris*; nor do old ones, all collected at least a decade ago, indicate any difference. Thus Dr. W. Serle recorded that in a male and a female of *flavirostris* collected by him at Kumba, Cameroun, the bill was greenish yellow, the feet red, and the iris and eyelids also red. Again, T. Ayres noted on the label of a female from Potchefstroom, Transvaal, that it had bill greenish yellow, tarsus and feet deep rose-red, iris bright crimson, eyelids rose-red. Data from other specimens of *flavirostris* agree substantially, as do descriptions in the published literature. Thus there appears to be no appreciable difference in the colours of the soft parts of the two species. In both the legs and feet fade very considerably in the course of the years after collecting.

TABLE
(measurements in millimetres)

	Wing	Tail	Culmen (rhamphotheca)	Tarsus	Middle toe without claw
			Limnocorax flavirostris		
8♂♂	101–108 (104·4)	37–46 (42·2)	24–28 (26·1)	41–45 (43·0)	37–45 (41·6)
7♀♀	97–109 (102·9)	39–48 (42·4)	22–26 (24·1)	36–45 (40·9)	36–43 (40·3)
400	98, 105, 108, 113	42, 46, 47, 51	25, 25, 26, 28	40, 40, 46, 47	40, 40, 42, 43

TABLE (cont.)
(measurements in millimetres)

	Wing	Tail	Culmen (rhamphotheca)	Tarsus	Middle toe without claw
			Porzana olivieri		
1♂	102	54	25	40	37
2♀♀	—, 112	47, 52	24, 27	35, 38	35, 36
			Porzana bicolor		
3♀♀	106, 113, 115	50, 51, 58	23, 24, 24	37, 39, 39	36, 36, 37
300	112, 115, 117	51, 54, 60	23, 26, 27	38, 38, 40	35, 37, 38

Notes: The material of *L. flavirostris* is from various localities in its wide range, and among other specimens includes four from Cameroun westward, eight from Malawi, Zambia and Angola, and four from South Africa.

The Nosy-Ambositra specimen of *P. olivieri* lacks the primaries, so that a wing-length could not be taken. Of two specimens in the American Museum of Natural History (part of the material recorded by Delacour 1932), a female has wing-length 105, a male (with somewhat enlarged testes) 103 mm, although the latter seems not to have the wings fully grown (Dr. Dean Amadon pers. comm.).

The measurements in the Table show little difference between the two, although those of the tail for *olivieri* are around the maximum for *flavirostris*, whereas those of the tarsus and middle toe are around the minimum.

Rand (1936: 360) records *olivieri* as inhabiting a narrow, deep stream bordered with a tall coarse grass called 'bararata' (according to Appert, this is actually a reed, *Phragmites communis*) and with a narrow fringe of floating lily pads and other aquatic vegetation. The birds were found standing on or running over the floating vegetation near the 'bararata', into which they retreated for shelter. They were not particularly shy or active. C. W. B. has been familiar with *flavirostris* in life for many years in Malawi and Zambia, and Rand's description for *olivieri* applies well in general to it too. Again, both Chapin (1939) and McLachlan & Liversidge (1970), for example, refer to the habit of *flavirostris* walking on aquatic vegetation, jacana-like.

The hunter who brought the specimen to Appert told him that it had been captured at its nest, which was near water, and in bulrushes *Typha angustifolia*, some 50 cm above ground level. The environment as a whole was marshy, with stretches of open water, and some water-lilies *Nymphaea stellata*. Besides these two, another dominant plant was the reed *Phragmites communis*. The nest contained two eggs, which unfortunately came to an end in the kitchen, although Appert was able to recover some shell fragments, now with the specimen in Cambridge. These are in fact sufficient to show a general creamy white colour, slightly glossed, heavily freckled all over with reddish brown, on underlying greyish lilac. There does not appear to be any marked difference from descriptions for *flavirostris*; see for example Bannerman (1931). Again, as with Rand's description of the habitat, C. W. B. can picture *flavirostris* fitting well into the presently described one at Nosy-Ambositra. Appert could find no developed egg in the ovary of the specimen, so that the clutch of two was apparently complete. Such a clutch-size would seem small for *flavirostris*, although Benson *et al.* (1964) do give five records for this size.

It may be noted at this point that *olivieri* is only known from western Madagascar. The original specimen came from Antsalova, near Maintirano, ca. 18° 28′ S., 44° 45′ E., and the seven recorded by Delacour (1932) (and also by Rand 1936: 359) from Ambararatabe, near Soalala, ca. 16° 19′ S., 46° 04′ E. (see map in Rand 1936: 147). The Nosy-Ambositra specimen is the first from the south-west, and represents an extension of known range of some 360 km to the southward.

Comparing *P. olivieri* with *bicolor*, the resemblance is certainly close. However, *bicolor* is distinctly paler chestnut on the upper parts, the slate of the head and under parts also appreciably paler. In *bicolor* there is also a tendency to white on the chin and throat, with always some white on the carpalia, but neither of these characters is apparent at all in *olivieri*. One of the specimens of *bicolor*, a female from Ngoi-Tio, Tonkin, collected by H. Stevens, had the iris 'vermillion-red, orbital skin pinkish', bill 'sap-green, tip dusky' and tarsus 'pale lobster-red'. Thus in the colour of the soft parts too there would appear to be little difference from *olivieri* (or *flavirostris*). The wing measurements in the Table indicate that *bicolor* is a little larger. Smythies (1953) gives the habitat of *bicolor* as 'small marshes and streams amongst grass and cultivation'; and Ali & Ripley (1969) as 'patches of jungle in and around rice cultivation, grass-bordered streams, pools or swampy patches in forest, often very dense'. From these descriptions there is no very obvious difference from the habitat of *olivieri* or *flavirostris*. Judging from Stuart Baker (1935), the eggs may also be very similar.

On zoogeographical grounds it is likely that *olivieri* has a closer affinity with the African *flavirostris* rather than the Asiatic *bicolor*. Allowing for the possibility of extinction, it may nevertheless be significant that in the present time *olivieri* is unknown in eastern Madagascar and *bicolor* in peninsular India. Admittedly there are some elements of affinity with Asia rather than Africa in the Malagasy avifauna (Moreau 1966: 329). Nevertheless Moreau (*op. cit*: 332) gives a total of 55 species in his group A (water-birds) for Madagascar, of which, *olivieri* aside, it is not possible to point to a single one as being of probable Asiatic origin. Thus, in comparison with Africa, among the Rallidae *Porzana pusilla*, *Porphyrula alleni*, *Porphyrio madagascariensis* and *Fulica cristata* exist undifferentiated, while the genus *Sarothrura*, otherwise endemic to Africa, is represented by two species confined to Madagascar. It would be hardly surprising if the progeny of the present day *Limnocorax flavirostris*, so widespread and successful a species in Africa, had colonised Madagascar too. Incidentally, it has recently been recorded as breeding at Lake Arrigui, in the Kaouar (Kawar) area, well out into the southern Sahara, at ca. 19° N., 12° E. (Fairon 1971).

We certainly do not wish to appear dogmatic, but we nevertheless suggest that it is most probable that the nearest relative of *olivieri* is *flavirostris*, and it is suggested that they form a superspecies. The similarity between *olivieri* and *bicolor* could be due to convergence, of which Moreau (1966: 113) gives a remarkable example in the South African *Turdus o. olivaceus* and the South American *T. r. rufiventris*, specimens of both of which we have seen. Indeed, another example, albeit less exact, concerns the Malagasy *Rallus madagascariensis*, presumably derived from African *R. caerulescens* stock. Nevertheless in its streaked upper parts and in the colour of the under parts, it bears a closer resemblance to the nearctic *R. limicola* than to either *caerulescens* or the palaearctic *aquaticus*—again presumably convergence.

Finally, White (1951) drew attention to the close similarity between the genera *Limnocorax* and *Porzana*, and certainly there seems a good case for placing *flavirostris*, *olivieri*, *bicolor* and *tabuensis* in the same genus. Peters (1934) places *flavirostris* in *Limnocorax*, these other three in *Porzana*. On the other hand, Ripley & Ali (1969), while they recognise *Porzana*, place *bicolor* in the genus *Amaurornis*. As pointed out by Olson (1970), groupings among the Rallidae as a whole present difficulties, and they are beyond the scope of this paper. But we advocate the placing of all four of these species in the same genus, perhaps most correctly *Porzana*.

Summary: The little known rail *Porzana olivieri* is recorded from south-western Madagascar for the first time. A first description of the egg is also given. A probable affinity of *P. olivieri* with the African *flavirostris* is discussed. A similarity to the Asiatic *P. bicolor* may be the result of convergence.

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References:

Ali, S. & Ripley, S. D. 1969 *Handbook of the birds of India and Pakistan.* Vol. 2. Bombay: Oxford Univ. Press.

Bannerman, D. A. 1931. *The birds of tropical West Africa.* Vol. 2. London: Crown Agents.

Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. Stuart. 1970. Notes on the birds of Zambia. *Arnoldia (Rhodesia)* 4(40).

Benson, C. W., Brooke, R. K. & Vernon, C. J. 1964. Bird breeding data for the Rhodesias and Nyasaland. *Occ. Pap. Nat. Mus. S. Rhod.* 27B: 30–105.

Chapin, J. P. 1939. The birds of the Belgian Congo. Part II. *Bull. Amer. Mus. Nat. Hist.* 75.

Delacour, J. 1932. Les oiseaux de la Mission Zoologique Franco-Anglo-Américaine a Madagascar. *Oiseau* 2: 1–96.

Fairon, J. 1971. Exploration ornithologique au Kaouar. *Gerfaut* 61: 146–161.

Grandidier, G. & Berlioz, J. 1929. Description d'une espèce nouvelle de Madagascar de la famille des Rallidés. *Bull. Acad. Malgache* n. s. 10: 83.

Lavauden, L. 1937. *Histoire naturelle et politique de Madagascar.* Suppl. Oiseaux. Paris: Soc. Ed. Geogr. Mar. et Col.

McLachlan, G. R. & Liversidge, R. 1970. *Roberts birds of South Africa.* 3rd. ed. Cape Town: John Voelcker Bird Book Fund.

Moreau, R. E. 1966. *The bird faunas of Africa and its islands.* London: Academic Press.

Olson, S. L. 1970. The relationships of *Porzana flaviventer. Auk* 87: 805–808.

Peters, J. L. 1934. *Checklist of birds of the world.* Vol. II. Cambridge, Mass.: Mus. Comp. Zool., Harv.

Rand, A. L. 1936. The distribution and habits of Madagascar birds. *Bull. Amer. Mus. Nat. Hist.* 72(5): 143–449.

Smythies, B. E. 1953. *The birds of Burma.* 2nd ed. Edinburgh & London: Oliver & Boyd.

Stuart Baker, E. C. 1935. *The nidification of birds of the Indian Empire.* Vol. IV. London: Taylor & Francis.

White, C. M. N. 1951. Systematic notes on African birds. *Ibis* 93: 460–465.

Coereba flaveola and the Geospizinae

by M. P. Harris

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The Geospizinae, or Darwin's Finches, are restricted to the Galapagos Islands, and Cocos Island, about 675 km to the north-east. The first species were described by Gould (1837) from specimens brought back from the Galapagos by Darwin. Darwin's visit to the islands in 1835 and his subsequent writings resulted in an awakening of interest in the islands, many collections were made and many island populations of the finches were described as distinct species. It is now generally accepted (see Lack 1969), that there are only 14 species in the group and that these can be placed in five genera—

Geospiza (six species of ground finches), *Camarhynchus* (five species of tree finches), *Platyspiza* (monotypic Vegetarian Finch), *Certhidea* (monotypic Warbler Finch) and (*Pinaroloxias* (monotypic Cocos Finch). The last species is endemic to Cocos Island, the other 13 are endemic to Galapagos.

The systematic position of *Certhidea* was the subject of dispute for many years. Gould (1837) placed it alongside the other members of the group though Darwin, presumably struck by its warbler-like appearance, expressed his doubts. Sclater & Salvin (1870) divorced it from the other species and placed it near *Conirostrum* in the Coerebidae, whereas Lucas (1894) and Ridgway (1901) were convinced that it belonged to the Mniotiltidae (now the Parulidae). On the basis of the anatomy, Snodgrass (1903) thought that the whole group, including *Certhidea* and *Pinaroloxias*, were genetically related. Swarth (1929) erected a new family for the group, the Geospizidae, but this did not gain acceptance and they are normally considered a subfamily, the Geospizinae, of the Fringillidae. Recently Paynter (1970) and Sibley (1970) have included them in the Emberizinae.

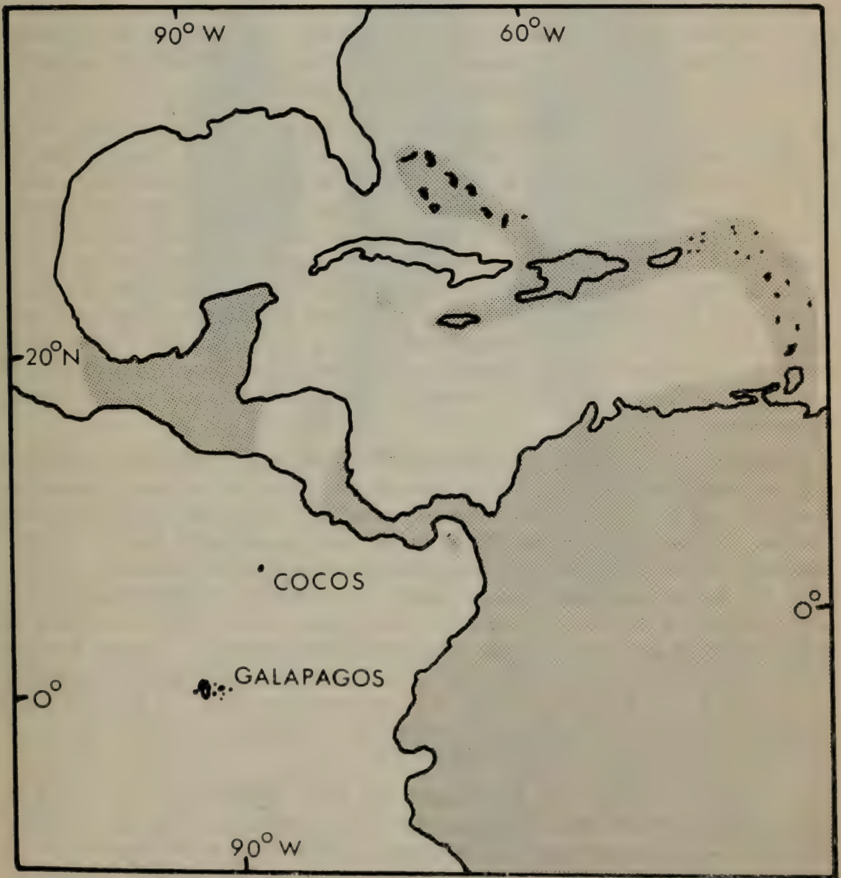

Figure 1. Breeding range of the Bananaquit *Coereba flaveola*, including islands covered by the stippled area, in relation to Galapagos and Cocos Islands.

Pinaroloxias was originally described (as *Cactornis inornata*) by Gould (1843) from a specimen thought to have come from the Low Archipelago (Polynesia), though Darwin suspected that it might have been collected on Cocos Island—a fact brought to general notice by Richmond (1902) after Townsend (1895) had described another specimen from Cocos as *Cocornis agassizi*. The position of *Pinaroloxias* (as the genus is now known) in the Geospizinae has never been questioned.

Even if it is allowed that the Geospizinae consists of closely related species, probably of monophyletic origin, it is extremely difficult to decide which species are nearest to the ancestral stock. Although they are understandably wary, and stress the almost insurmountable problems of separating taxonomic from ecological affinities, most authors mentioned above have tended to the view that the Geospizinae probably evolved from some finch-like ancestor. However, as Amadon (1950) stated, "it is by no means proved that the thinner billed Geospizids (*Certhidea*, and, more especially, *Pinaroloxias*) are not nearest the ancestral type." Ridgway (1901), although mentioning that *Pinaroloxias* reminded him of the black race of *Coereba flaveola*, which was then considered a species in its own right *C. atrata*, had no doubts that its affinities were with the other Geospizines. However, in my opinion, *Coereba* should at least be considered as a possible link between *Pinaroloxias* (and so the Galapagos species) and the mainland ancestor.

Coereba is extremely widespread in the tropical and subtropical Americas, the West Indies excepting Cuba but including most of the smaller islands, and also the Pearl Islands and Gorgona Island off the Pacific coasts of Panama and Colombia respectively (Figure 1). It is an island bird par excellence, being very widely dispersed and occurring in many different habitats and usually being commoner on islands than on mainlands. The species is also highly polytypic with 41 subspecies (Lowery & Monroe 1968), including all-black forms on St. Vincent, Grenada, Islas Gran Roque, Los Tostigos, and Isla de Cayo Sal (in Lesser Antilles and islands off Venezuela). Therefore it would appear to be the sort of species which might easily evolve into several well differentiated forms if it managed to get established on a suitable archipelago.

Within the Geospizinae, the fully adult male plumage varies from all black in *Pinaroloxias* and *Geospiza* to an unstreaked olive-grey in some *Camarhynchus* spp. and *Certhidea*; other *Camarhynchus* spp. and *Platyspiza* are intermediate with some black on head, breast and upperparts. Except for *G. conirostris*, females lack black, being rather nondescript and streaked, or olive-grey. In this sexual dimorphism *Geospiza* resembles some fringillids, e.g. *Volatinia*, rather than the sexually monomorphic *Coereba*. The advantages of black plumage are obscure and may vary from species to species but are unlikely to concern protective colouration. In the Geospizinae it is impossible to say which of the plumage types is more primitive, but it is admitted that the difference between the sexually monomorphic all-black *Coereba* and mostly dimorphic Geospizids might be significant.

Superficially *Coereba* and *Pinaroloxias* are very similar, but this could be due to convergence just as well as to genetic affinity. Most of the field observations of *Pinaroloxias* (summarized by Slud 1967) could easily apply to *Coereba* except that the former species feeds more on the ground. This could be due to lack of competitors as the only other land-birds are a flycatcher *Nesotriccus ridgwayi* (which, although an endemic genus, appears closely related to the endemic Galapagos *Myiarchus magnirostris*), the widespread Yellow Warbler *Dendroica petechia* and an endemic cuckoo *Coccyzus* (*minor*) *ferrugineus*. As has been stressed by others who consider the Geospizinae to be of monophyletic origin, the nest of *Pinaroloxias* is like that of the Galapagos species, i.e. a round, domed, rather bulky nest of dried vegetation with a side entrance hole mid-way or lower down one side. The eggs of the group are white, spotted red. These nesting details also apply to *Coereba*, though it must be pointed out that some finches, e.g. *Tiaris*, also have domed nests.

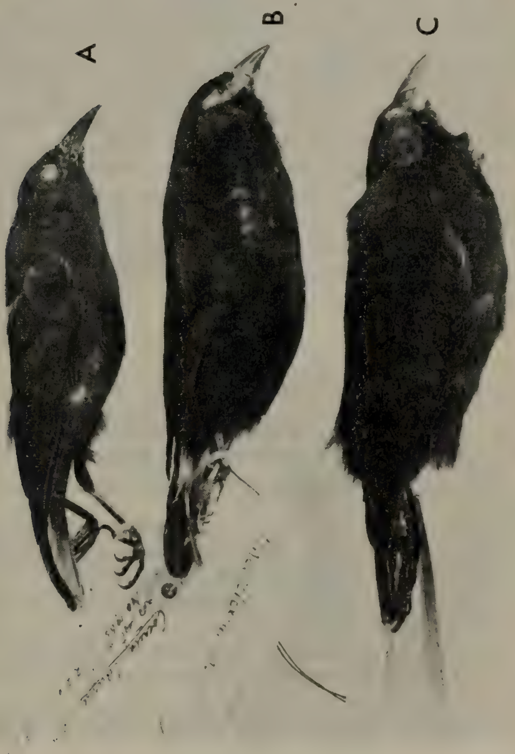

Plate 1. Skins of *Coereba flaveola* (A), *Pinaroloxias inornata* (B) and *Geospiza difficilis* (C) in collection of British Museum.

As far as I am aware the anatomy of *Pinaroloxias* has not been compared with that of *Coereba*. Lucas (1894) compared *Certhidea* with *Coereba* and found them somewhat different and concluded that *Coereba*, *Dacnis* and *Chlorophanes* were the nearest members of the Coerebidae to the Mniotiltidae, and that *Certhidea* belonged to the Mniotiltidae. The taxonomic position of *Coereba* is obscure. Beecher (1951) and Lowery & Monroe (1968) have dismembered the Coerebidae, and for convenience, the latter appended *Coereba* to the Parulidae, remarking that it might belong to a monotypic family, Sibley (1970) considers *Coereba* merely a genus in the Tribe Parulini in the Emberizinae.

The only migrant passerines recorded in the Galapagos during many years of observations have been a few hirundines and Bobolinks *Dolichonyx oryzivorus* and two *Piranga* tanagers (Harris in prep.), whereas Slud (1967) recorded 18 migrant passerine species, including some as common, on Cocos Island March–April 1963. Presumably many passerines cross the 485 km of sea from Central America to Cocos but not the 1,100 km to the Galapagos. Most of the 26 land birds and 11 shore birds which breed in the Galapagos, or their ancestors, could have colonized the Galapagos from Central America, perhaps via Cocos. The two exceptions are *Coccyzus melacoryphus* and the rail *Neocrex erythrops* (probably a recent coloniser) which do not occur in Central America but breed in Colombia. It seems likely that *Pinaroloxias* or some ancestor colonized the Galapagos directly from Central America or via Cocos, rather than that some Galapagos representative of the group reached and differentiated on Cocos (contra Snodgrass 1903). If this is so the fact that no Galapagos Geospizid is truely a nectar-feeder need not be a drawback in the link for *Pinaroloxias* is rather an intermediate stage.

To suggest a link between *Coereba* and the Geospizinae on perhaps unsound morphological characters and circumstantial geographical and ecological evidence may seem a little rash but it is at least as feasible as assuming an affinity with the Fringillidae or Emberizidae. Certainly the possibility should be borne in mind. A thorough study using more refined techniques might be rewarding.

References:

Amadon, D. 1950. The Hawaiian Honeycreepers (Aves, Drepaniidae). *Bull. Amer. Mus. Nat. Hist.* 95: 151–262.

Beecher, W. J. 1951. Convergence in the Coerebidae. *Wils. Bull.* 63: 274–287.

Gould, J. 1837. Remarks on a series of ground finches. *Proc. Zool. Soc. Lond.:* 4–7.

— 1843. Descriptions of nine new species of birds collected during the recent voyage of HMS Sulphur. *Proc. Zool. Soc. Lond.:* 103–106.

Lack, D. 1969. Subspecies and sympatry in Darwin's finches. *Evolution* 23: 252–263.

Lowery, G. H. & Monroe, B. L. 1968. Family Parulidae in *Check-list of birds of the world*, vol. 14 (ed. R. A. Paynter). Cambridge: Mus. Comp. Zool.

Lucas, F. A. 1894. Notes on the anatomy and affinities of Coerebidae and other American birds. *Proc. U.S. Nat. Mus.* 17: 299–312.

Paynter, R. A. 1970. *Check-list of birds of the world*, vol. 13. Cambridge: *Mus. Comp. Zool.*

Richmond, C. W. 1902. Note on *Pinaroloxias inornata* (Gould). *Proc. Biol. Soc. Wash.* 15: 247–248.

Ridgway, R. 1901. *The birds of Middle and North America*, Vol. 1. Washington: Smithsonian Institution.

Sclater, P. L. & Salvin, O. 1870. Characters of new species of birds collected by Dr. Harbel in the Galapagos Islands. *Proc. Zool. Soc. Lond*: 322–327.

Sibley, C. G. 1970. A comparative study of the egg-white proteins of Passerine birds. *Peabody Mus. Nat. Hist.*, Bull. no. 32.

Slud, P. 1967. The birds of Cocos Island (Costa Rica). *Bull. Amer. Mus. Nat. Hist.* 134: 263–295.

Snodgrass, R. E. 1903. Notes on the anatomy of *Geospiza*, *Cocornis* and *Certhidea*. *Auk* 20 402–417.

Swarth, H. S. 1929. A new bird family (Geospizidae) from the Galapagos Islands. *Proc. Calif. Acad. Sci* 18: 29–43.

Townsend, C. H. 1895. Birds from Cocos and Malpelo Islands, with notes on petrels obtained at sea. *Bull. Mus. Comp. Zool.* 27: 121–126.

[The cost of reproduction of the Figure and Plate in the above paper is to be borne by the author—Ed.]

The austral races of *Serinus sulphuratus* (Linnaeus)

by P. A. Clancey

Received 15th September 1972

Variation of subspecific import in the canary *Serinus sulphuratus* of southern and eastern Africa is marked but largely clinal in nature, and its interpretation in the form of conventional subspecies, especially in the south of the range, is subjective and has given rise to some discussion in recent periodic literature. In considering this variation, it is important to remember that the populations are on the whole local and do not form a continuum. Characters of importance in arranging the populations into subspecies are variability in size, bill mass, the greenness or yellowness of the upper-parts and the extent to which they are streaked, the richness of the yellow of the ventral surface, and the presence or absence of a greenish breast-band. Furthermore, in some populations the sexes are dissimilar in size, in others virtually alike. Colour characters are greatly modified through the action of the intense African sun in a relatively short period of time, significantly so within four or five months after the completion of the moult in March–April. The most recent reviewer is Rand (1968a), while Mees (1970) and Clancey (1972) have commented to a greater or lesser degree on some of Rand's conclusions. Clancey (1966) admitted four races for southern Africa, i.e., Africa south of the Cunene, Okavango and Zambesi Rivers, adjusting one of the names to be employed in a further note (Clancey 1968), this adjustment being reversed in the light of Rand's conclusions in Clancey (1972).

A careful re-examination of the southern African populations confirms that four races can be satisfactorily recognised from the region concerned, and revised characters and ranges of these are as follows:—

(a) **Serinus sulphuratus sulphuratus** (Linnaeus)

Loxia sulphurata Linnaeus (*Syst. Nat.*, 12th edition, i, 1788: 305. Cape of Good Hope, Cape).

Upper-parts Olive-Green (Ridgway 1912: pl. iv), the feathers with dusky shaft-streaks, the plain rump and upper tail-coverts Warbler Green (same pl.). Below deep lemon-yellow, the breast, sides and flanks overlaid with Warbler Green. Size large and bill massive; sexes dissimilar in size.

Wings of ♂♂ 80·5 – 85·5, of ♀♀ 78 – 81, exposed culmens of ♂♀ 12·5 – 14·5 mm.

Range: Winter Rainfall region of the south-western and southern Cape, east to about the lower Great Fish River, east of which it intergrades with the following.

(b) **Serinus sulphuratus wilsoni** (Roberts)

Crithagra sulphurata wilsoni Roberts (*Ann. Transv. Mus.* 18(3), 1936: 216. Kloof, Natal).

Moderately differentiated from last in being paler and yellower green above (Warbler Green), the rump and upper tail-coverts near Pyrite Yellow (Ridgway: pl. iv). Below, slightly brighter yellow, and breast-band often not so dark. Size and bill mass about the same, and sexes dissimilar in size.

Wings of ♂♂ 80·5 – 84·5, of ♀♀ 77 – 81, exposed culmens of ♂♀ 12 – 14 mm.

Range: Eastern Cape east from about the Great Fish River to Natal, western Zululand, western Swaziland, ? eastern Orange Free State, and eastern and northern Transvaal.

. (c) **Serinus sulphuratus languens** Clancey

Serinus sulphuratus languens Clancey (*Durban Mus. Novit.* 6(15), 1962: 193. Manhica, Sul do Save, Mocambique).

Slightly yellower and still paler above than *wilsoni*, the streaking less intense, and rump and upper tail-coverts bright Pyrite Yellow. Below more vibrant lemon-yellow, the breast band poorly developed or absent. Size much smaller, and bill smaller and weaker. Sexes virtually alike in size. Wings of ♂♂ 73 – 78, of ♀♀ 73 – 76·5, exposed culmens of ♂♀ 11 – 12·5 mm.

Range: North-eastern Zululand, Sul do Save, where mainly along the littoral and on the off-shore islands, and Manica e Sofala, Mocambique, to the plateau and eastern districts of Rhodesia.

Note: Rhodesian birds in fresh dress (June) average a trifle darker green above than Mocambique coastal examples, but subdivision of this population complex is out of the question (cf. Mees 1970).

(d) **Serinus sulphuratus ?shelleyi** Neumann

Serinus shelleyi Neumann (*Ornith. Monatsber.* 11, 1903: 184. Kafuro, Karagwe, Tanzania).

? Serinus (*?flaviventris*) *loveridgei* van Someren (*Bull. Brit. Orn. Cl.* 41, 1921: 114. Lumbo, northern Mocambique).

Compared with *languens* differs in having the upper-parts yellower, less green or yellow-green (about yellowish citrine). Ventrally, lacks the breast-band and olive overlay to sides and flanks. Wing-length similar to *languens*, but bill distinctly smaller and weaker; sexes virtually alike in size.

Range: Comes within present limits about the Shiré/Zambesi confluence and Tete district, Mocambique, extending north to northern Mocambique and southern Malawi, and, according to Rand (1968b), presumably across central Tanzania to Uganda and adjacent eastern Zaire (doubtful).

Note: Judging from Map 321 in Hall & Moreau (1970), the populations of Rand's *shelleyi* from the south-eastern humid coastal area and from the north-west, where in temperate highlands, are not in contact, the eastern elements of *S. s. frommi* Kothe, 1911: Namanjera, Ufipa, south-western Tanzania, also apparently intruding. It seems certain that the population of Rand's *shelleyi* coming within present limits on the lower Zambesi River should bear the name *S. s. loveridgei* as argued by me (1968), in which case true *shelleyi* would have a range confined to east-central equatorial Africa. The *sharpii* complex of populations probably comprises four and not three subspecies as admitted by Rand (1968b).

An accurate grouping of Tanzanian and adjacent region populations and a definitive allocation of names based on tropical African elements will have to await the assembling of adequate material in fresh condition from critical areas in Tanzania, from which territory no less than three important subspecific names have been proposed, namely, *sharpii* Neumann (1900), *shelleyi* Neumann (1903), and *frommi* Kothe (1911).

References:

Clancey, P. A. 1966. A catalogue of birds of the South African sub-region. *Durban Mus. Novit.* 7(9): 607–608.

— 1968. Subspeciation in some birds from Rhodesia. *Durban Mus. Novit.* 8(12): 177–178.

— 1972. A catalogue of birds of the South African sub-region. Suppl. 2. *Durban Mus. Novit.* 9(12): 199.

Hall, B. P. & Moreau, R. E. 1970. *An Atlas of speciation in African passerine birds.* London: British Museum (Nat. Hist.).

Mees, G. F. 1970. Birds of the Inyanga National Park, Rhodesia. *Zool. Verhandel.* 109: 56–57.

Rand, A. L. 1968a. Geographical variation in the canary *Serinus sulphuratus*. *Fieldiana Zool.* 51(8).
— 1968b. In *Check-list of the birds of the world.* 14: 222–223. Cambridge: Museum of Comparative Zoology.
Ridgway, R. 1912. *Color standards and color nomenclature.* Washington.

On some British Museum specimens of the Unicolored Blackbird *Agelaius cyanopus*

by Kenneth C. Parkes

Received 13th October 1972

During a recent brief visit to Tring, I was able through the courtesy of Mr. I. C. J. Galbraith to examine some of the British Museum (Natural History) specimens of the family Icteridae. Among these were specimens of *Agelaius cyanopus* that I had not examined when I wrote my revision of this species (Parkes 1966), although some of them are mentioned in that paper. Personal examination enabled me to clarify the status of several specimens.

In my 1966 paper I used for this species the rather awkward English name "Azara's Marsh Blackbird", a modification of the name "Azara's Marsh Bird" used by Hellymayr (1937: 179). Meyer de Schauensee (1966: 436) has introduced the simpler English name "Unicolored Blackbird". Most students of Neotropical birds are now adopting the English names used in Meyer de Schauensee's list in an attempt to achieve uniformity, and I shall do so for *A. cyanopus*.

When I described *A. c. xenicus* from north-eastern Brazil, I knew of only ten specimens, four of which (formerly in the Museu Goeldi, Belem, Brazil) could not be found and have probably been destroyed (Parkes 1966: 9–10). BM (NH) specimen 1885–7–12–143, listed as "d. ♂ jr. sk." by Sclater (1886: 345), proves to be another example of this little-known subspecies. It bears the label of the P. L. Sclater collection. The locality was originally given as "R. Amazon" but this has been lined out and "Brazil" substituted. This change was undoubtedly made because the species was not known from the Amazon region in Sclater's time, and the locality was assumed to be erroneous. With the discovery of *A. c. xenicus* from the general vicinity of the Amazon Delta, however, it becomes evident that the originally given locality was undoubtedly correct. The specimen may well have been taken somewhere near Pará (now Belem), a source of many early specimens from northern Brazil.

As indicated by Sclater, specimen "*d*" is a young male, in first basic (not juvenile) plumage. It closely resembles AMNH 128981 from Arumanduba, Pará, the only other specimen of *xenicus* in this plumage that I have examined, but is in fresher condition. The black feathers of the throat and breast have dark olive-brown tips; these are slightly worn away on the breast, and have apparently been completely worn away on the AMNH specimen.

Specimen "*f*" of Sclater's list is given as "♀ ad. st." from "Para (?)". In my 1966 paper, I stated that Mr. Derek Goodwin had sent me a description of this specimen that indicated it was not an adult female of *xenicus*; that the query attached to the ascribed locality "Para" was thereby justified; and that the very dark colour described by Mr. Goodwin suggested to me that it might in fact be an example of the dark race *A. c. atroolivaceus* of the coast of

Rio de Janeiro. Mr. Goodwin suspected that the specimen might be a young male rather than an adult female; in spite of Sclater's annotation "♀ ad.", there is no identification of sex on the label. I have now examined this specimen, which has been taken down from the original mounted condition. The sexing as female was apparently correct, as it matches other females in size (males are larger even when in the female-like first basic plumage). Although I had no authentic specimens of *atroolivaceus* available at Tring for direct comparison, the very dark colours of the bird in question indicate that it almost certainly represents that subspecies, and therefore originated in the vicinity of Rio de Janeiro, another source of many early Brazilian specimens (Wied described *atroolivaceus* in 1831).

One further correction to the list of specimens in the *Catalogue* remains to be made. Specimen "*e*" from the Salvin-Godman collection, which bears no data other than "Brazil", is not "♀ ad." as given by Sclater, but an immature male, as shown by the presence of several incoming black feathers as well as by its larger size.

References:

Hellmayr, C. E. 1937. Catalogue of birds of the Americas . . . etc. *Field Mus. Nat. Hist. Zool. Ser.* 13, part 10: 1–228.

Meyer de Schauensee, R. 1966. *The species of birds of South America*. Narberth, Pennsylvania: Livingston.

Parkes, K. C. 1966. Geographic variation in Azara's Marsh Blackbird, *Agelaius cyanopus*. *Proc. Biol. Soc. Washington*, 79: 1–12.

Sclater, P. L. 1886. *Catalogue of birds in the British Museum*, vol. XI. London: British Museum (Natural History).

Bulletin of Zoological Nomenclature: Opinions

In continuation of *Bull. Brit. Orn. Cl.* 91, 1971: 116, and by permission of the International Trust for Zoological Nomenclature, the following Ruling is quoted as an extract from an Opinion published in *Bull. Zool. Nomencl.* affecting birds:

OPINION 981

(*Bull. Zool. Nomencl.* 29 (1), 1972: 152)

Podicipedidae Bonaparte, 1831 (Aves); validated under the plenary powers

(1) Under the plenary powers it is hereby Ruled that the name of the family of which *Podiceps* Latham, 1787, is the type-genus is PODICIPEDIDAE.

(2) Paragraph 2 (a) of Direction 75 and the corresponding entry under Name No. 190 on the Official List of Family-Group Names are hereby deleted.

(3) The family-group name PODICIPEDIDAE (correction of PODICEPINAE) Bonaparte, [1832] (type-genus *Podiceps* Latham, 1787) is hereby placed on the Official List of Family-Group Names in Zoology with the Name Number 469.

(4) The family-group name PODICIPITIDAE (correction of PODICEPINAE) Bonaparte, [1832] (an incorrect spelling for PODICIPEDIDAE) is hereby placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology with the Name Number 462.

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CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, R. E. F. Peal, 24 Creighton Avenue, London N.10.

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